

APPENDIX E

**RES
ANALYTICAL SUMMARY TABLES
AND SAMPLE LOCATION MAPS**

**ASBESTOS, LEAD AND
SOIL SURVEY INVESTIGATION**

Of Velasco Incinerator Facility
Located at 800 North Velasco
Houston, Texas

Prepared for:

City of Houston
Public Works and Engineering
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Project Number 0167-003-050

May 24, 1996

Tables

TABLE NO. 1
LISTING OF ASBESTOS SAMPLES COLLECTED

| Sample Number | Location | Suspect Material | Category/ Friability | Asbestos Content\Type |
|----------------------|---|-------------------------|---------------------------------|----------------------------------|
| ASB-01 | Main Building-1st Floor North Incinerator | Soft Yellow Brick | Friable | None Detected |
| ASB-02 | Main Building-1st Floor North Incinerator | Filler Insulation | Friable | None Detected |
| ASB-03 | Main Building-1st Floor North Incinerator | Firebrick | Friable | None Detected |
| ASB-04 | Main Building-1st Floor North Incinerator | Filler Insulation | Friable | None Detected |
| ASB-05 | Main Building-1st Floor North Incinerator | Soft Brick | Friable | None Detected |
| ASB-06 | Main Building-1st Floor North Incinerator | Brick Mortar | Category I Non-Friable | None Detected |
| ASB-07 | Main Building-1st Floor East Windows | Window Putty | Category I Non-Friable | None Detected |
| ASB-08 | Main Building-1st Floor South Incinerator | Soft Yellow Brick | Friable | None Detected |
| ASB-09 | Main Building-1st Floor South Incinerator | White Filler Insulation | Friable | None Detected |
| ASB-10 | Main Building-2nd Floor North Incinerator | Vibration Cloth | Category I Friable | 45% - Chrysotile |
| ASB-11 | Main Building-2nd Floor East Windows | Window Putty | Category I Non-Friable | None Detected |
| ASB-12 | Main Building-2nd Floor South Incinerator | Insulation Blanket | Friable | 75% - Chrysotile |
| ASB-13 | Main Building-2nd Floor Duct Work to Incinerator | Duct Insulation | Friable | None Detected |
| ASB-14 | Main Building-2nd Floor | Black Tar Insulation | Category I Non-Friable | None Detected |
| ASB-15 | Main Building-2nd Floor South Incinerator | Red Fire Brick | Friable | None Detected |
| ASB-16 | Main Building South Smoke Stack | Brown Plaster | Friable | Trace Chrysotile |
| ASB-17 | Main Building North Smoke Stack | Mortar | Category I Non-Friable | None Detected |

| Sample Number | Location | Suspect Material | Category/ Friability | Asbestos Content/Type |
|---------------|------------------------------------|------------------|----------------------------|--------------------------|
| ASB-18 | Main Building North Smoke Stack | Brick | Category II Non-Friable | None Detected |

* Trace Asbestos < 1%

TABLE NO. 2
LISTING OF LEAD-BASED PAINT SAMPLES COLLECTED

| Sample Number | Location | Lead Content (in %) | LHC Code |
|---------------|---------------------------------|------------------------|-------------|
| Pb-01 | Main Building-Door Frame | 3.73 | C-3 |
| Pb-02 | Main Building-North Incinerator | 0.03 | A |
| Pb-03 | Main Building-Stair Handrail | 3.02 | C-3 |
| Pb-04 | Main Building-Door Frame | 0.322 | A |
| Pb-05 | Main Building-Window Frame | 2.89 | C-3 |
| Pb-06 | Main Building-Concrete Walls | 0.841 | C-3 |
| Pb-07 | Main Building-Concrete Walls | 3.41 | C-3 |
| Pb-08 | Main Building-South Incinerator | 0.091 | A |
| Pb-09 | Main Building-North Incinerator | 0.921 | C-3 |

LISTING OF LEAD-BASED ASH SAMPLES COLLECTED

| Sample Number | Location | Lead Content (ug/g) |
|---------------|---------------------------------|------------------------|
| ASH-01 | Main Building-North Incinerator | 2480 |
| ASH-02 | Main Building-North Incinerator | 3330 |
| ASH-03 | Main Building-North Incinerator | 7130 |
| ASH-04 | Main Building-South Incinerator | 8430 |
| ASH-05 | Main Building-South Incinerator | 4800 |
| ASH-06 | Main Building-South Incinerator | 5310 |

Incinerator

LISTING OF LEAD-BASED SOIL SAMPLES COLLECTED

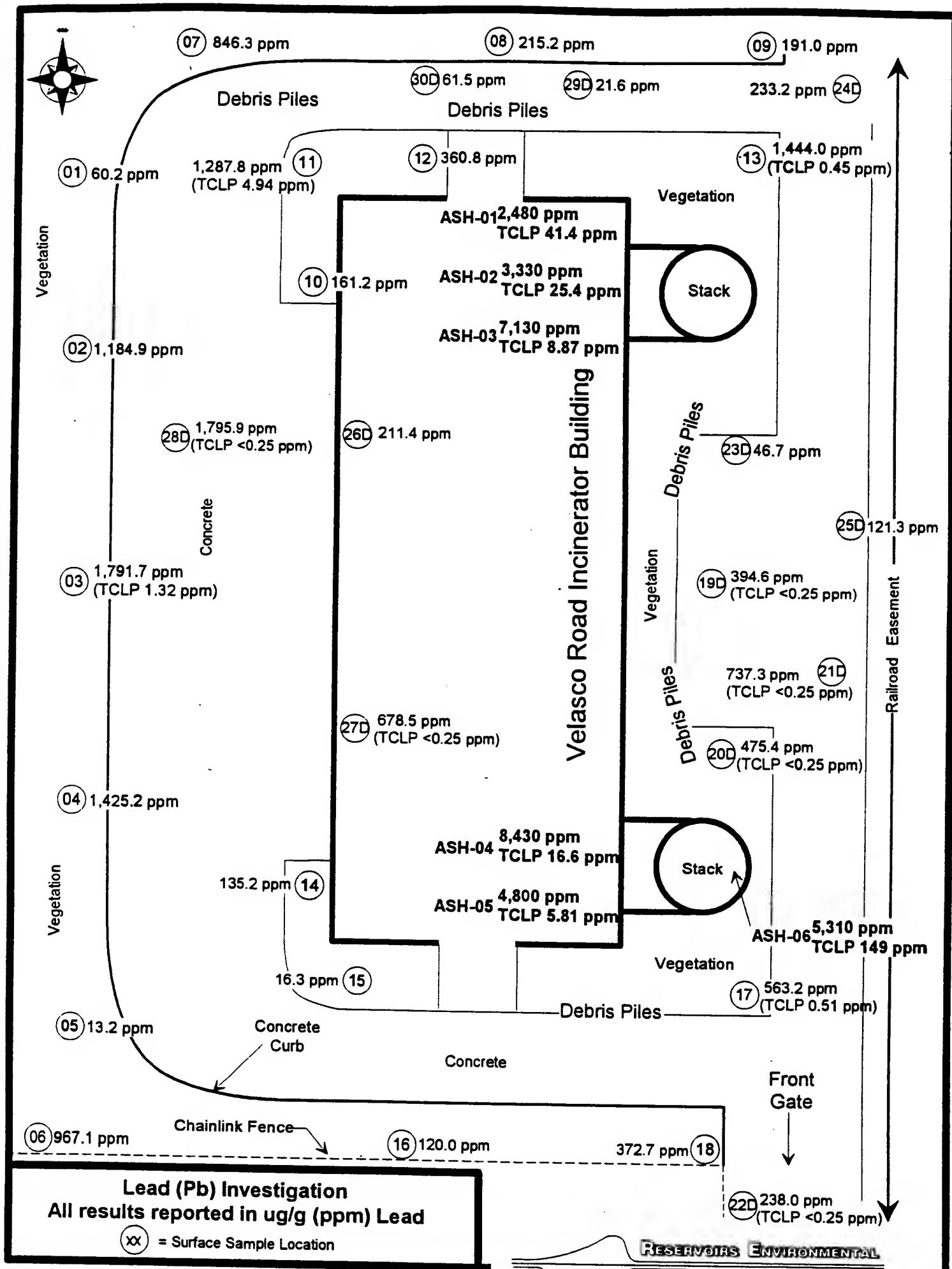
| Sample Number | Location | Lead Content (ug/g) |
|---------------|---|------------------------|
| Soil-01 | Main Building Perimeter Northwest Corner of Concrete Pad | 60.2 |
| Soil-02 | Main Building Perimeter Northwest Corner of Concrete Pad | 1184.9 |
| Soil-03 | Main Building Perimeter West of Concrete Pad | 1791.7 |
| Soil-04 | Main Building Perimeter Southwest Corner of Concrete Pad | 1425.2 |
| Soil-05 | Main Building Perimeter Southwest Corner of Concrete Pad | 13.2 |
| Soil-06 | Main Building Perimeter Southwest Corner of Concrete Pad | 967.1 |
| Soil-07 | Main Building Perimeter Northwest of Concrete Pad | 846.3 |
| Soil-08 | Main Building Perimeter North of Concrete Pad | 215.2 |
| Soil-09 | Main Building Perimeter Northeast of Concrete Pad | 191.0 |
| Soil-10 | Adjacent to Main Building Northwest Corner | 161.2 |
| Soil-11 | Adjacent to Main Building Northwest Corner | 1287.8 |
| Soil-12 | Adjacent to Main Building North | 360.8 |
| Soil-13 | Main Building Perimeter Northeast of Concrete Pad | 1444.0 |
| Soil-14 | Adjacent to Main Building Southwest Corner | 135.2 |
| Soil-15 | Adjacent to Main Building Southwest Corner | 16.3 |
| Soil-16 | Main Building Perimeter South of Concrete Pad | 120.0 |
| Soil-17 | Main Building Perimeter Southeast of Concrete Pad | 563.2 |
| Soil-18 | Main Building Perimeter Southeast of Concrete Pad | 372.7 |

| Sample Number | Location | Lead Content (ug/g) |
|---------------|---|------------------------|
| Soil-19D | Main Building Perimeter Debris Pile East | 394.6 |
| Soil-20D | Main Building Perimeter Debris Pile East | 475.4 |
| Soil-21D | Main Building Perimeter Debris Pile East | 737.3 |
| Soil-22D | Main Building Perimeter Debris Near South Entrance | 238.0 |
| Soil-23D | Main Building Perimeter Debris Pile East | 46.7 |
| Soil-24D | Main Building Perimeter Debris Adjacent to Railroad Easement | 233.2 |
| Soil-25D | Main Building Perimeter Debris Pile East | 121.3 |
| Soil-26D | Main Building Interior Waste Pit North | 211.4 |
| Soil-27D | Main Building Interior Waste Pit South | 678.5 |
| Soil-28D | Main Building Perimeter Debris from Concrete Pad-West | 1795.9 |
| Soil-29D | Main Building Perimeter Ash Debris Piles North | 21.6 |
| Soil-30D | Main Building Perimeter Ash Debris Piles North | 61.5 |
| Soil-31 | Secondary Building Perimeter Ash Debris East | 1387.8 |
| Soil-32 | Secondary Building Perimeter Ash Debris East | 770.1 |
| Soil-33 | Secondary Building Perimeter Ash Debris South | 4921.0 |
| Soil-34 | Secondary Building Perimeter Ash Debris West | 1781.2 |
| Soil-35 | Secondary Building Perimeter Ash Debris West | 14.2 |
| Soil-36 | Secondary Building Perimeter Ash Debris North | 1393.9 |

TABLE NO. 3
LISTING OF TCLP-RCRA SAMPLES COLLECTED

| Sample Number | Pb (ppm) | Cd (ppm) | As (ppm) | Cr (ppm) | Hg (ppm) | Se (ppm) | Ag (ppm) | Br (ppm) |
|----------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Soil-03 | 1.32 | BDL | BDL | BDL | BDL | BDL | BDL | 2.6 |
| Soil-11 | 4.94 | BDL | BDL | BDL | BDL | BDL | BDL | 2.7 |
| Soil-13 | 0.45 | BDL | BDL | BDL | BDL | BDL | BDL | 2.4 |
| Soil-17 | 0.51 | BDL | 0.003 | BDL | BDL | BDL | BDL | 3.0 |
| Soil-19D | BDL | BDL | 0.020 | BDL | BDL | BDL | BDL | 1.8 |
| Soil-20D | BDL | BDL | 0.007 | BDL | BDL | BDL | BDL | 0.78 |
| Soil-21D | BDL | BDL | 0.001 | BDL | BDL | BDL | BDL | 2.4 |
| Soil-22D | BDL | 0.07 | BDL | BDL | BDL | BDL | BDL | 2.2 |
| Soil-27D | BDL | BDL | 0.003 | BDL | BDL | BDL | BDL | 0.56 |
| Soil-28D | BDL | BDL | 0.011 | BDL | BDL | BDL | BDL | 1.5 |
| Soil-33 | BDL | BDL | 0.002 | BDL | BDL | BDL | BDL | 2.3 |
| Soil-36 | BDL | BDL | 0.002 | BDL | BDL | BDL | BDL | 2.1 |
| Ash-01 | 41.4 | 0.54 | 0.002 | BDL | BDL | BDL | BDL | 0.71 |
| Ash-02 | 25.4 | 0.31 | 0.017 | BDL | BDL | BDL | BDL | 0.84 |
| Ash-03 | 8.87 | 0.89 | 0.002 | BDL | BDL | BDL | BDL | 0.23 |
| Ash-04 | 16.6 | 0.56 | 0.002 | BDL | BDL | BDL | BDL | 0.72 |
| Ash-05 | 5.81 | 0.38 | 0.004 | BDL | BDL | BDL | BDL | 0.65 |
| Ash-06 | 149 | 2.0 | 0.013 | BDL | BDL | BDL | BDL | 0.78 |

**Location Drawings
of
Materials Sampled**





Ash Mounds/Vegetation

Ash Mounds/Vegetation

14.3 ppm (35)

(36) 1,393.9 ppm
(TCLP <0.25 ppm)

(32) 770.1 ppm

Isolated Stacks
(Velasco Rd.)

1,781.2 ppm (34)

Ash Mounds/Vegetation

(33) 4,921.0 ppm
(TCLP <0.25 ppm)

(31) 1,387.8 ppm

Ash Mounds/Vegetation

Earthen Drainage Ditch

Gravel Road

Railroad Easement

Incinerator Building

Lead (Pb) Investigation
All results reported in ug/g (ppm) Lead

(XX) = Surface Sample Location

RESERVOIRS ENVIRONMENTAL

APPENDIX F

**WESTON SLUG TEST AND AQUIFER CAPACITY
DATA AND CALCULATIONS**

| | | | |
|--|------------------|--------------------|---|
| CLIENT/SUBJECT <u>LPCO</u> | | W.O. NO. _____ | |
| TASK DESCRIPTION <u>SEEPAGE VELOCITY CALCULATION</u> | | TASK NO. _____ | |
| PREPARED BY <u>JEFF WIDENBERG</u> | DEPT <u>1275</u> | DATE <u>1/8/99</u> | APPROVED BY _____ DEPT _____ DATE _____ |
| MATH CHECK BY _____ | DEPT _____ | DATE _____ | |
| METHOD REV. BY _____ | DEPT _____ | DATE _____ | |

EQUATION

$$V_s = \frac{K \cdot i}{n}$$

WHERE

V_s = SEEPAGE VELOCITY

K = HYDRAULIC CONDUCTIVITY

i = GRADIENT

n = POROSITY

- HYDRAULIC CONDUCTIVITY RANGED FROM 9.87×10^{-4} TO 9.49×10^{-3} CM/SEC BASED ON SLUG TEST RESULTS AT MONITOR WELLS (LP)MW-2, (LP)MW-3, (LP)MW-5, AND (HCl)MW-1.
- GRADIENT IS ESTIMATED TO BE 0.003 BASED ON WATER LEVEL MEASUREMENTS.
- POROSITY IS ASSUMED TO BE 0.22.
- CALCULATE THE V_s RANGE :

$$V_{smin} = \frac{(9.87 \times 10^{-4} \text{ CM/SEC}) \left(\frac{2834.6 \text{ FT/DAY}}{2834.6 \text{ CM/SEC}} \right) (0.003)}{0.20} = 0.11 \text{ FT/DAY}$$

$$V_{smax} = \frac{(9.49 \times 10^{-3} \text{ CM/SEC}) \left(\frac{2834.6 \text{ FT/DAY}}{2834.6 \text{ CM/SEC}} \right) (0.003)}{0.20} = 1.08 \text{ FT/DAY}$$

SUMMARY OF THE HYDRAULIC CONDUCTIVITY
for the
LEAD PRODUCTS SITE

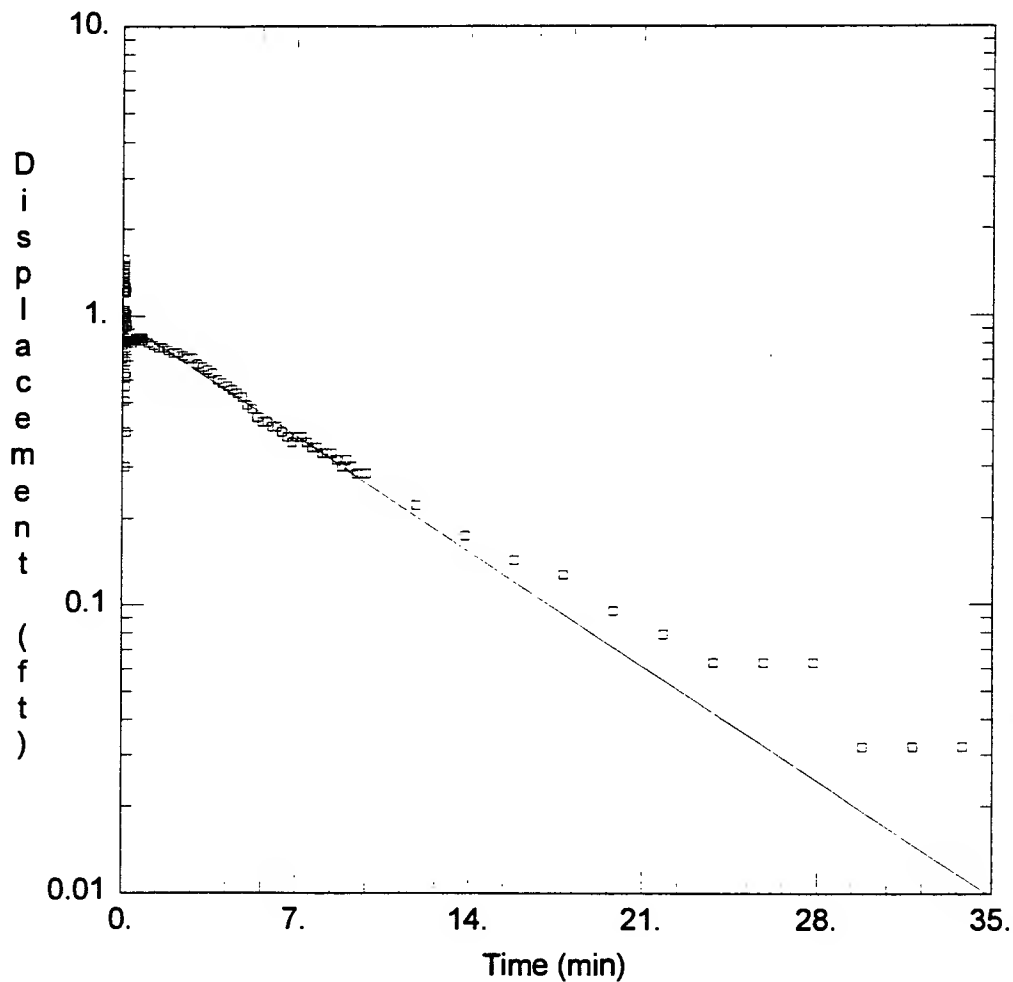
| Well ID | Hydraulic Conductivity (cm/sec) ¹ | |
|---------|--|-----------------|
| | Slug In | Slug Out |
| HCIMW01 | 1.33E-03 | 9.87E-04 |
| LPMW02 | 5.72E-04 | 1.42E-03 |
| LPMW03 | 4.93E-04 | NA ² |
| LPMW05 | 8.33E-04 | 9.49E-03 |

Notes:

¹ Hydraulic conductivity (K) is measured in centimeters per second (cm/sec)

² Data for the slug out test at LPMW03 were unusable.

The Bouwer and Rice method (1976) was used to determine the hydraulic conductivity due to its suitability for analysis in unconfined aquifers.



LEAD PRODUCTS COMPANY

Data Set: H:\GEP\HERMIT\LEADPROD\HCIMW01I.AQT

Date: 07/30/98

Time: 17:13:41

PROJECT INFORMATION

Company: Roy F. Weston, Inc.

Client: Lead Products, Houston, TX

Test Well: HCIMWO1

Test Date: 06-15-98

AQUIFER DATA

Saturated Thickness: 7. ft

Anisotropy Ratio (K_z/K_r): 1.

WELL DATA

Initial Displacement: 1.568 ft

Water Column Height: 7. ft

Casing Radius: 0.333 ft

Wellbore Radius: 0.666 ft

Screen Length: 10. ft

Gravel Pack Porosity: 0.35

SOLUTION

Aquifer Model: Unconfined

$K = 0.001334$ cm/sec

Solution Method: Bouwer-Rice

$y_0 = 0.958$ ft

Data Set: H:\GEP\HERMIT\LEADPROD\HCIMW01I.AQT

Title: Lead Products Company

Date: 07/30/98

Time: 17:14:02

PROJECT INFORMATION

Company: Roy F. Weston, Inc.

Client: Lead Products, Houston, TX

Test Date: 06-15-98

Test Well: HCIMW01

AQUIFER DATA

Saturated Thickness: 7 ft

Anisotropy Ratio (Kz/Kr): 1

OBSERVATION WELL DATA

Number of observation wells: 1

Observation Well No. 1: HCIMW01

X Location: 0 ft

Y Location: 0 ft

Observation Data

| <u>Time (min)</u> | <u>Displacement (ft)</u> |
|-------------------|--------------------------|
|-------------------|--------------------------|

| | |
|--------|-------|
| 0. | 0.744 |
| 0.0067 | 0.712 |
| 0.01 | 0.76 |
| 0.0133 | 0.855 |
| 0.0167 | 0.855 |
| 0.02 | 0.902 |
| 0.0233 | 0.982 |
| 0.0267 | 0.966 |
| 0.03 | 0.997 |
| 0.0333 | 0.982 |
| 0.0367 | 0.997 |
| 0.04 | 1.029 |
| 0.0433 | 0.982 |
| 0.0467 | 1.045 |
| 0.05 | 1.219 |
| 0.0533 | 1.346 |
| 0.0567 | 1.394 |
| 0.06 | 1.314 |
| 0.0633 | 1.219 |
| 0.0667 | 1.203 |
| 0.07 | 1.251 |

| | |
|--------|-------|
| 0.0733 | 1.283 |
| 0.0767 | 1.203 |
| 0.08 | 1.362 |
| 0.0833 | 1.441 |
| 0.0867 | 1.489 |
| 0.09 | 1.409 |
| 0.0933 | 1.568 |
| 0.0967 | 1.045 |
| 0.1 | 0.633 |
| 0.1033 | 0.507 |
| 0.1067 | 0.57 |
| 0.11 | 0.776 |
| 0.1133 | 0.301 |
| 0.1167 | 1.013 |
| 0.12 | 1.203 |
| 0.1233 | 0.997 |
| 0.1267 | 0.696 |
| 0.13 | 0.918 |
| 0.1333 | 1.251 |
| 0.1367 | 0.934 |
| 0.14 | 0.934 |
| 0.1433 | 0.617 |
| 0.1467 | 0.396 |
| 0.15 | 0.95 |
| 0.1533 | 1.013 |
| 0.1567 | 0.918 |
| 0.16 | 0.76 |
| 0.1767 | 0.839 |
| 0.1933 | 0.839 |
| 0.21 | 0.823 |
| 0.2267 | 0.807 |
| 0.2433 | 0.823 |
| 0.26 | 0.823 |
| 0.2767 | 0.823 |
| 0.2933 | 0.823 |
| 0.31 | 0.823 |
| 0.3267 | 0.823 |
| 0.3433 | 0.823 |
| 0.36 | 0.807 |
| 0.3767 | 0.807 |
| 0.3933 | 0.823 |
| 0.41 | 0.823 |
| 0.4267 | 0.823 |
| 0.4433 | 0.823 |
| 0.46 | 0.823 |
| 0.4767 | 0.823 |
| 0.4933 | 0.823 |
| 0.51 | 0.823 |
| 0.5267 | 0.823 |

| | |
|--------|-------|
| 0.5433 | 0.823 |
| 0.56 | 0.839 |
| 0.5767 | 0.839 |
| 0.5933 | 0.839 |
| 0.61 | 0.839 |
| 0.6267 | 0.839 |
| 0.6433 | 0.823 |
| 0.66 | 0.839 |
| 0.6767 | 0.839 |
| 0.6933 | 0.839 |
| 0.71 | 0.839 |
| 0.7267 | 0.839 |
| 0.7433 | 0.839 |
| 0.76 | 0.839 |
| 0.7767 | 0.839 |
| 0.7933 | 0.823 |
| 0.81 | 0.823 |
| 0.8267 | 0.839 |
| 1.027 | 0.807 |
| 1.227 | 0.791 |
| 1.427 | 0.776 |
| 1.627 | 0.776 |
| 1.827 | 0.76 |
| 2.027 | 0.744 |
| 2.227 | 0.744 |
| 2.427 | 0.728 |
| 2.627 | 0.712 |
| 2.827 | 0.712 |
| 3.027 | 0.68 |
| 3.227 | 0.665 |
| 3.427 | 0.649 |
| 3.627 | 0.633 |
| 3.827 | 0.601 |
| 4.027 | 0.585 |
| 4.227 | 0.57 |
| 4.427 | 0.555 |
| 4.627 | 0.539 |
| 4.827 | 0.523 |
| 5.027 | 0.491 |
| 5.227 | 0.475 |
| 5.427 | 0.444 |
| 5.627 | 0.428 |
| 5.827 | 0.428 |
| 6.027 | 0.412 |
| 6.227 | 0.412 |
| 6.427 | 0.396 |
| 6.627 | 0.38 |
| 6.827 | 0.364 |
| 7.027 | 0.38 |

| | |
|-------|-------|
| 7.227 | 0.38 |
| 7.427 | 0.364 |
| 7.627 | 0.349 |
| 7.827 | 0.349 |
| 8.027 | 0.333 |
| 8.227 | 0.333 |
| 8.427 | 0.333 |
| 8.627 | 0.317 |
| 8.827 | 0.301 |
| 9.027 | 0.317 |
| 9.227 | 0.301 |
| 9.427 | 0.285 |
| 9.627 | 0.285 |
| 9.827 | 0.285 |
| 11.83 | 0.222 |
| 13.83 | 0.174 |
| 15.83 | 0.143 |
| 17.83 | 0.127 |
| 19.83 | 0.095 |
| 21.83 | 0.079 |
| 23.83 | 0.063 |
| 25.83 | 0.063 |
| 27.83 | 0.063 |
| 29.83 | 0.032 |
| 31.83 | 0.032 |
| 33.83 | 0.032 |

SOLUTION

Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

VISUAL ESTIMATION RESULTS

Estimated Parameters

| <u>Parameter</u> | <u>Estimate</u> | |
|------------------|-----------------|--------|
| K | 0.001334 | cm/sec |
| y0 | 0.958 | ft |

AUTOMATIC ESTIMATION RESULTS

Estimated Parameters

| <u>Parameter</u> | <u>Estimate</u> | <u>Std. Error</u> | |
|------------------|-----------------|-------------------|--------|
| K | 0.001334 | 0.0001179 | cm/sec |
| y0 | 0.958 | 0.01962 | ft |

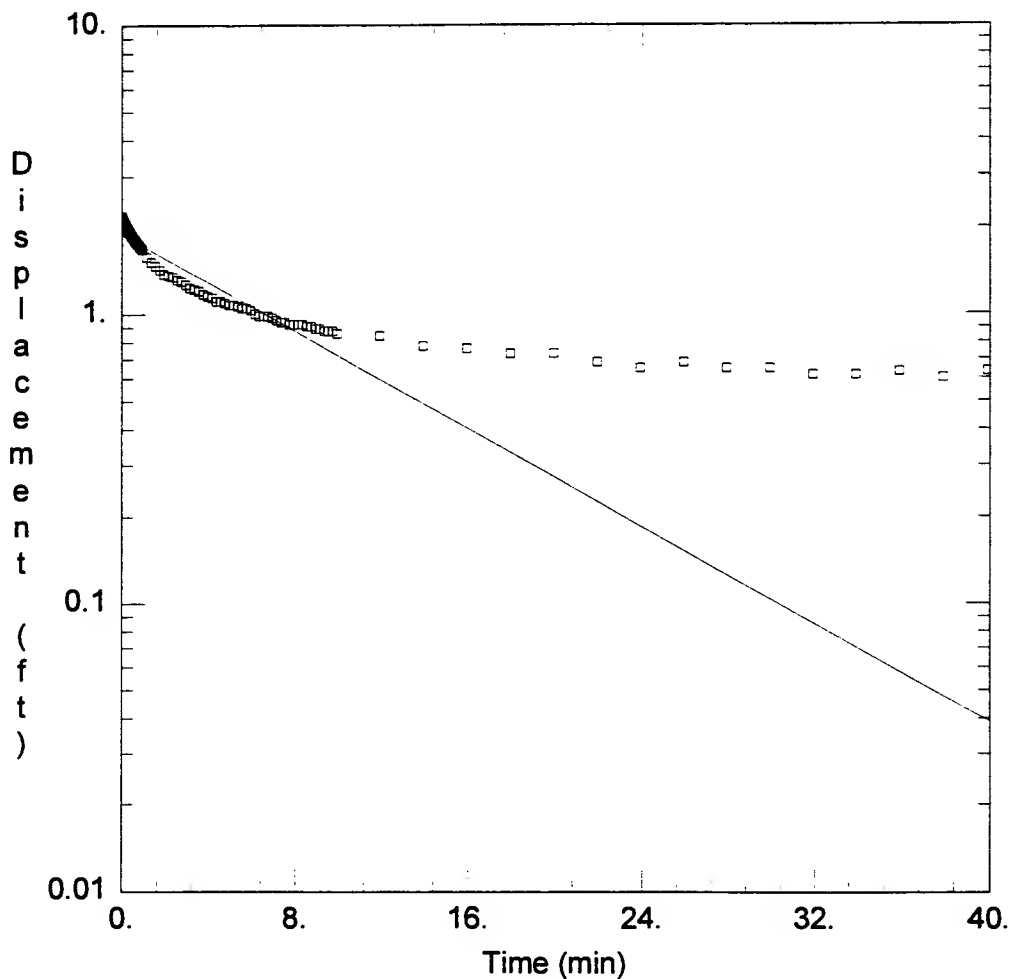
Parameter Correlations

| | K | y0 |
|----|------|------|
| K | 1.00 | 0.44 |
| y0 | 0.44 | 1.00 |

Residual Statistics

for weighted residuals

| | |
|----------------------|------------------------|
| Sum of Squares ... | 4.261 ft ² |
| Variance | 0.0298 ft ² |
| Std. Deviation | 0.1726 ft |
| Mean | 0.001689 ft |
| No. of Residuals ... | 145 |
| No. of Estimates ... | 2 |



LEAD PRODUCTS COMPANY

Data Set: H:\GEP\HERMIT\LEADPROD\HCIMW010.AQT

Date: 07/30/98

Time: 17:15:50

PROJECT INFORMATION

Company: Roy F. Weston, Inc.

Client: Lead Products, Houston TX

Test Well: HCIMW01

Test Date: 06-15-98

AQUIFER DATA

Saturated Thickness: 7. ft

Anisotropy Ratio (K_z/K_r): 1.

WELL DATA

Initial Displacement: 2.202 ft

Water Column Height: 7. ft

Casing Radius: 0.333 ft

Wellbore Radius: 0.666 ft

Screen Length: 10. ft

Gravel Pack Porosity: 0.35

SOLUTION

Aquifer Model: Unconfined

$K = 0.0009872$ cm/sec

Solution Method: Bouwer-Rice

$y_0 = 1.891$ ft

Data Set: H:\GEP\HERMIT\LEADPROD\HCIMW01O.AQT
Title: Lead Products Company
Date: 07/30/98
Time: 17:16:07

PROJECT INFORMATION

Company: Roy F. Weston, Inc.
Client: Lead Products, Houston TX
Test Date: 06-15-98
Test Well: HCIMW01

AQUIFER DATA

Saturated Thickness: 7 ft
Anisotropy Ratio (Kz/Kr): 1

OBSERVATION WELL DATA

Number of observation wells: 1

Observation Well No. 1: HCIMW01

X Location: 0 ft
Y Location: 0 ft

| <u>Observation Data</u> | |
|-------------------------|--------------------------|
| <u>Time (min)</u> | <u>Displacement (ft)</u> |
| 0. | 2.202 |
| 0.0033 | 2.202 |
| 0.0066 | 2.186 |
| 0.01 | 2.186 |
| 0.0133 | 2.171 |
| 0.0166 | 2.171 |
| 0.02 | 2.171 |
| 0.0233 | 2.155 |
| 0.0266 | 2.155 |
| 0.03 | 2.155 |
| 0.0333 | 2.155 |
| 0.0366 | 2.139 |
| 0.04 | 2.123 |
| 0.0433 | 2.123 |
| 0.0466 | 2.107 |
| 0.05 | 2.107 |
| 0.0533 | 2.107 |
| 0.0566 | 2.107 |
| 0.06 | 2.107 |
| 0.0633 | 2.107 |
| 0.0666 | 2.107 |

| | |
|--------|-------|
| 0.07 | 2.107 |
| 0.0733 | 2.107 |
| 0.0766 | 2.091 |
| 0.08 | 2.091 |
| 0.0833 | 2.091 |
| 0.0866 | 2.076 |
| 0.09 | 2.091 |
| 0.0933 | 2.107 |
| 0.0966 | 2.091 |
| 0.1 | 2.091 |
| 0.1033 | 2.091 |
| 0.1066 | 2.091 |
| 0.11 | 2.091 |
| 0.1133 | 2.076 |
| 0.1166 | 2.076 |
| 0.12 | 2.076 |
| 0.1233 | 2.076 |
| 0.1266 | 2.076 |
| 0.13 | 2.076 |
| 0.1333 | 2.06 |
| 0.1366 | 2.076 |
| 0.14 | 2.076 |
| 0.1433 | 2.076 |
| 0.1466 | 2.06 |
| 0.15 | 2.06 |
| 0.1533 | 2.06 |
| 0.1566 | 2.044 |
| 0.16 | 2.044 |
| 0.1633 | 2.06 |
| 0.1666 | 2.044 |
| 0.17 | 2.044 |
| 0.1733 | 2.044 |
| 0.1766 | 2.044 |
| 0.18 | 2.044 |
| 0.1833 | 2.028 |
| 0.1866 | 2.028 |
| 0.19 | 2.028 |
| 0.1933 | 2.028 |
| 0.1966 | 2.028 |
| 0.2 | 2.028 |
| 0.2033 | 2.012 |
| 0.2066 | 2.012 |
| 0.21 | 2.012 |
| 0.2133 | 2.012 |
| 0.2166 | 2.012 |
| 0.22 | 2.012 |
| 0.2233 | 2.012 |
| 0.2266 | 2.012 |
| 0.23 | 1.996 |

| | |
|--------|-------|
| 0.2333 | 1.996 |
| 0.2366 | 1.996 |
| 0.24 | 1.996 |
| 0.2433 | 1.996 |
| 0.2466 | 1.996 |
| 0.25 | 1.996 |
| 0.2533 | 1.98 |
| 0.27 | 1.98 |
| 0.2866 | 1.965 |
| 0.3033 | 1.965 |
| 0.32 | 1.949 |
| 0.3366 | 1.949 |
| 0.3533 | 1.933 |
| 0.37 | 1.917 |
| 0.3866 | 1.917 |
| 0.4033 | 1.901 |
| 0.42 | 1.885 |
| 0.4366 | 1.885 |
| 0.4533 | 1.87 |
| 0.47 | 1.87 |
| 0.4866 | 1.854 |
| 0.5033 | 1.854 |
| 0.52 | 1.838 |
| 0.5366 | 1.838 |
| 0.5533 | 1.822 |
| 0.57 | 1.822 |
| 0.5866 | 1.806 |
| 0.6033 | 1.806 |
| 0.62 | 1.79 |
| 0.6366 | 1.79 |
| 0.6533 | 1.774 |
| 0.67 | 1.774 |
| 0.6866 | 1.759 |
| 0.7033 | 1.759 |
| 0.72 | 1.759 |
| 0.7366 | 1.743 |
| 0.7533 | 1.743 |
| 0.77 | 1.743 |
| 0.7866 | 1.727 |
| 0.8033 | 1.727 |
| 0.82 | 1.711 |
| 0.8366 | 1.711 |
| 0.8533 | 1.695 |
| 0.87 | 1.695 |
| 0.8866 | 1.695 |
| 0.9033 | 1.679 |
| 0.92 | 1.679 |
| 1.12 | 1.584 |
| 1.32 | 1.521 |

| | |
|-------|-------|
| 1.52 | 1.473 |
| 1.72 | 1.426 |
| 1.92 | 1.378 |
| 2.12 | 1.362 |
| 2.32 | 1.347 |
| 2.52 | 1.315 |
| 2.72 | 1.299 |
| 2.92 | 1.267 |
| 3.12 | 1.236 |
| 3.32 | 1.22 |
| 3.52 | 1.204 |
| 3.72 | 1.172 |
| 3.92 | 1.156 |
| 4.12 | 1.141 |
| 4.32 | 1.109 |
| 4.52 | 1.109 |
| 4.72 | 1.093 |
| 4.92 | 1.077 |
| 5.12 | 1.077 |
| 5.32 | 1.061 |
| 5.52 | 1.045 |
| 5.72 | 1.045 |
| 5.92 | 1.03 |
| 6.12 | 0.998 |
| 6.32 | 0.982 |
| 6.52 | 0.982 |
| 6.72 | 0.982 |
| 6.92 | 0.966 |
| 7.12 | 0.95 |
| 7.32 | 0.935 |
| 7.52 | 0.935 |
| 7.72 | 0.919 |
| 7.92 | 0.919 |
| 8.12 | 0.919 |
| 8.32 | 0.919 |
| 8.52 | 0.903 |
| 8.72 | 0.903 |
| 8.92 | 0.887 |
| 9.12 | 0.887 |
| 9.32 | 0.871 |
| 9.52 | 0.871 |
| 9.72 | 0.871 |
| 9.92 | 0.855 |
| 11.92 | 0.839 |
| 13.92 | 0.776 |
| 15.92 | 0.76 |
| 17.92 | 0.729 |
| 19.92 | 0.729 |
| 21.92 | 0.681 |

| | |
|-------|-------|
| 23.92 | 0.649 |
| 25.92 | 0.681 |
| 27.92 | 0.649 |
| 29.92 | 0.649 |
| 31.92 | 0.618 |
| 33.92 | 0.618 |
| 35.92 | 0.633 |
| 37.92 | 0.602 |
| 39.92 | 0.633 |

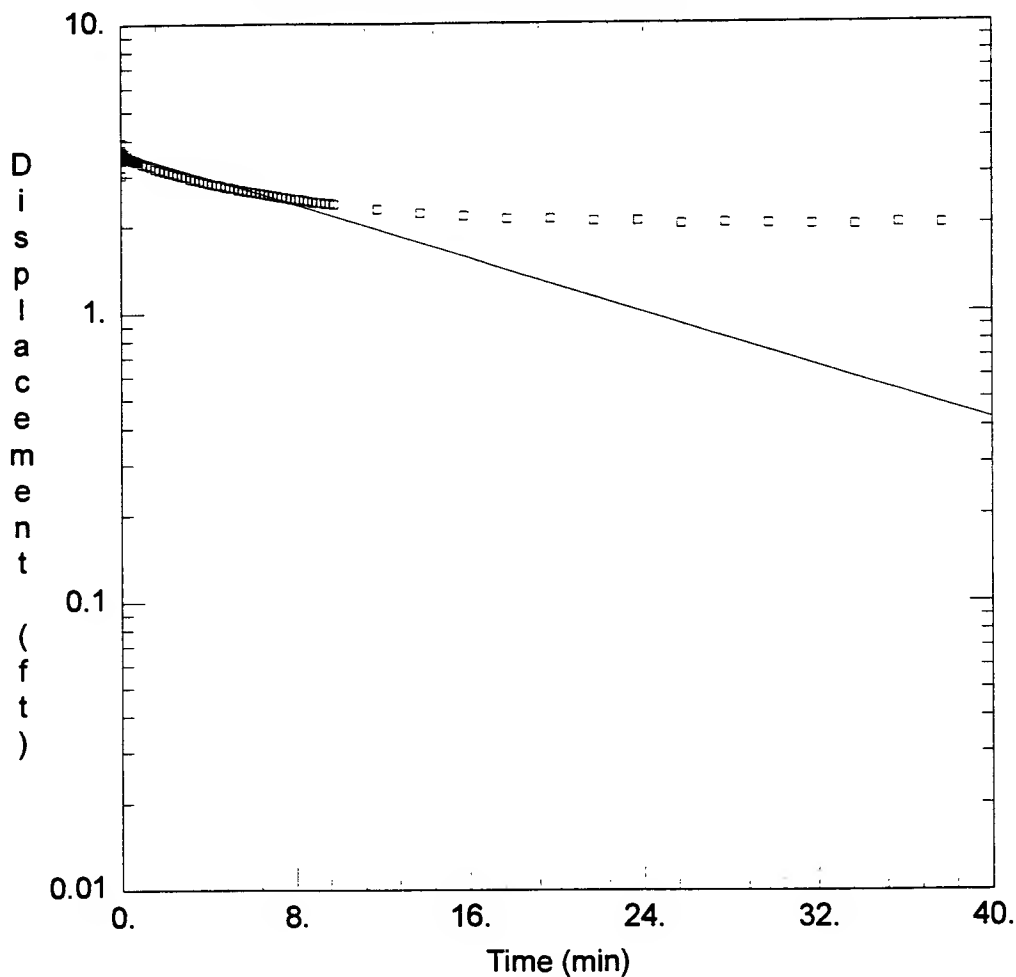
SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

VISUAL ESTIMATION RESULTS

Estimated Parameters

| <u>Parameter</u> | <u>Estimate</u> | |
|------------------|-----------------|--------|
| K | 0.0009872 | cm/sec |
| y0 | 1.891 | ft |



LEAD PRODUCTS COMPANY

Data Set: H:\GEP\HERMIT\LEADPROD\MW02I.AQT

Date: 07/30/98

Time: 17:16:54

PROJECT INFORMATION

Company: Roy F. Weston, Inc.

Client: Lead Products, Houston TX

Test Well: MW02

Test Date: 06-15-98

AQUIFER DATA

Saturated Thickness: 8. ft

Anisotropy Ratio (K_z/K_r): 1.

WELL DATA

Initial Displacement: 3.917 ft

Water Column Height: 8. ft

Casing Radius: 0.333 ft

Wellbore Radius: 0.666 ft

Screen Length: 10. ft

Gravel Pack Porosity: 0.35

SOLUTION

Aquifer Model: Unconfined

$K = 0.0005724$ cm/sec

Solution Method: Bouwer-Rice

$y_0 = 3.652$ ft

Data Set: H:\GEP\HERMIT\LEADPROD\MW02\AQT
Title: Lead Products Company
Date: 07/30/98
Time: 17:17:02

PROJECT INFORMATION

Company: Roy F. Weston, Inc.
Client: Lead Products, Houston TX
Test Date: 06-15-98
Test Well: MW02

AQUIFER DATA

Saturated Thickness: 8 ft
Anisotropy Ratio (K_z/K_r): 1

OBSERVATION WELL DATA

Number of observation wells: 1

Observation Well No. 1: MW02

X Location: 0 ft
Y Location: 0 ft

Observation Data

| <u>Time (min)</u> | <u>Displacement (ft)</u> |
|-------------------|--------------------------|
| 0. | 3.537 |
| 0.0034 | 3.03 |
| 0.0067 | 3.41 |
| 0.01 | 3.632 |
| 0.0134 | 3.711 |
| 0.0167 | 3.569 |
| 0.02 | 3.489 |
| 0.0234 | 3.584 |
| 0.0267 | 3.6 |
| 0.03 | 3.458 |
| 0.0334 | 3.584 |
| 0.0367 | 3.569 |
| 0.04 | 3.537 |
| 0.0434 | 3.553 |
| 0.0467 | 3.553 |
| 0.05 | 3.553 |
| 0.0534 | 3.569 |
| 0.0567 | 3.537 |
| 0.06 | 3.537 |
| 0.0634 | 3.553 |
| 0.0667 | 3.537 |

| | |
|--------|-------|
| 0.07 | 3.553 |
| 0.0734 | 3.553 |
| 0.0767 | 3.553 |
| 0.08 | 3.521 |
| 0.0834 | 3.553 |
| 0.0867 | 3.616 |
| 0.09 | 3.473 |
| 0.0934 | 3.521 |
| 0.0967 | 3.553 |
| 0.1 | 3.521 |
| 0.1034 | 3.521 |
| 0.1067 | 3.537 |
| 0.1234 | 3.553 |
| 0.14 | 3.521 |
| 0.1567 | 3.505 |
| 0.1734 | 3.505 |
| 0.19 | 3.505 |
| 0.2067 | 3.505 |
| 0.2234 | 3.473 |
| 0.24 | 3.6 |
| 0.2567 | 3.489 |
| 0.2734 | 3.521 |
| 0.29 | 3.489 |
| 0.3067 | 3.489 |
| 0.3234 | 3.473 |
| 0.34 | 3.473 |
| 0.3567 | 3.458 |
| 0.3734 | 3.458 |
| 0.39 | 3.458 |
| 0.4067 | 3.442 |
| 0.4234 | 3.442 |
| 0.44 | 3.442 |
| 0.4567 | 3.442 |
| 0.4734 | 3.442 |
| 0.49 | 3.426 |
| 0.5067 | 3.426 |
| 0.5234 | 3.426 |
| 0.54 | 3.426 |
| 0.5567 | 3.426 |
| 0.5734 | 3.41 |
| 0.59 | 3.41 |
| 0.6067 | 3.41 |
| 0.6234 | 3.41 |
| 0.64 | 3.394 |
| 0.6567 | 3.394 |
| 0.6734 | 3.394 |
| 0.69 | 3.394 |
| 0.7067 | 3.394 |
| 0.7234 | 3.378 |

| | |
|--------|-------|
| 0.74 | 3.378 |
| 0.7567 | 3.378 |
| 0.7734 | 3.378 |
| 0.9734 | 3.315 |
| 1.173 | 3.283 |
| 1.373 | 3.251 |
| 1.573 | 3.188 |
| 1.773 | 3.156 |
| 1.973 | 3.125 |
| 2.173 | 3.093 |
| 2.373 | 3.061 |
| 2.573 | 3.03 |
| 2.773 | 2.998 |
| 2.973 | 2.982 |
| 3.173 | 2.935 |
| 3.373 | 2.919 |
| 3.573 | 2.887 |
| 3.773 | 2.855 |
| 3.973 | 2.839 |
| 4.173 | 2.808 |
| 4.373 | 2.792 |
| 4.573 | 2.776 |
| 4.773 | 2.744 |
| 4.973 | 2.729 |
| 5.173 | 2.713 |
| 5.373 | 2.681 |
| 5.573 | 2.665 |
| 5.773 | 2.649 |
| 5.973 | 2.633 |
| 6.173 | 2.618 |
| 6.373 | 2.602 |
| 6.573 | 2.586 |
| 6.773 | 2.57 |
| 6.973 | 2.554 |
| 7.173 | 2.538 |
| 7.373 | 2.522 |
| 7.573 | 2.507 |
| 7.773 | 2.491 |
| 7.973 | 2.475 |
| 8.173 | 2.475 |
| 8.373 | 2.459 |
| 8.573 | 2.443 |
| 8.773 | 2.427 |
| 8.973 | 2.412 |
| 9.173 | 2.412 |
| 9.373 | 2.396 |
| 9.573 | 2.396 |
| 9.773 | 2.38 |
| 11.77 | 2.285 |

| | |
|-------|-------|
| 13.77 | 2.206 |
| 15.77 | 2.158 |
| 17.77 | 2.11 |
| 19.77 | 2.11 |
| 21.77 | 2.063 |
| 23.77 | 2.063 |
| 25.77 | 2.015 |
| 27.77 | 2.031 |
| 29.77 | 2.015 |
| 31.77 | 2. |
| 33.77 | 1.985 |
| 35.77 | 2.015 |
| 37.77 | 2. |

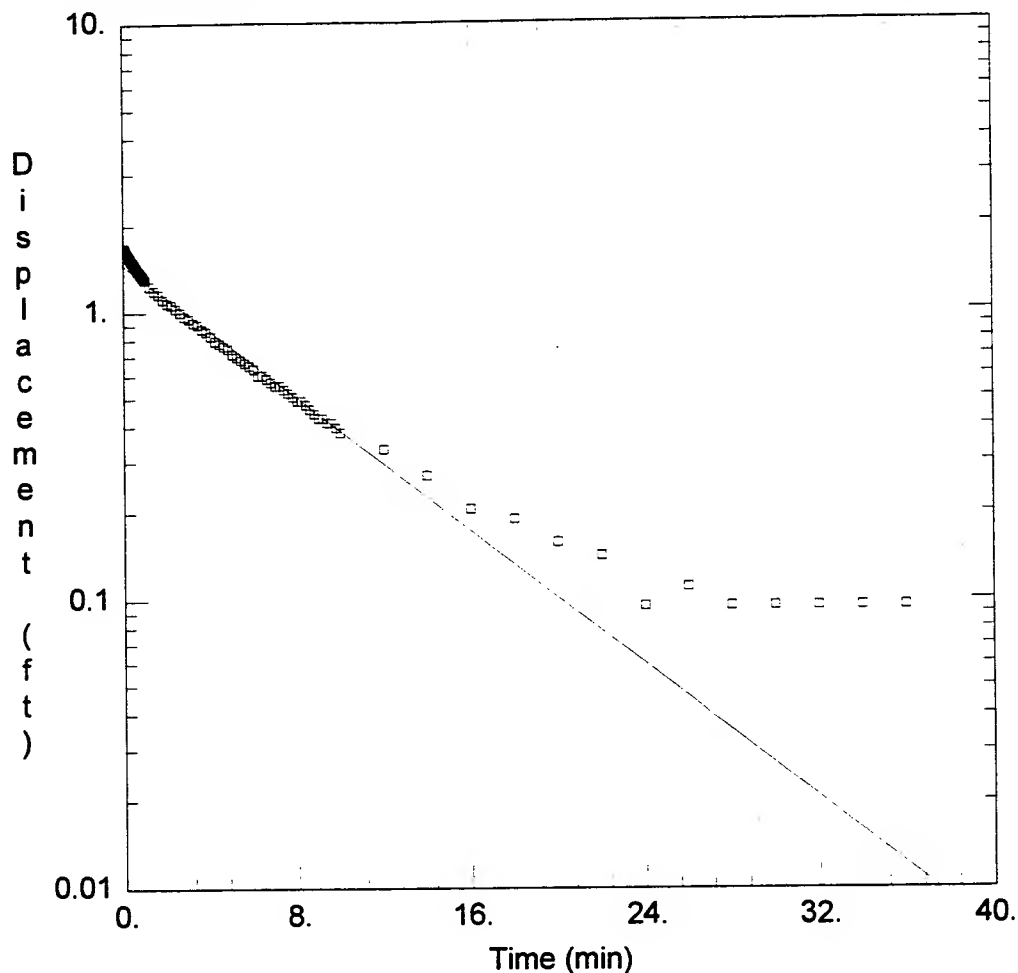
SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

VISUAL ESTIMATION RESULTS

Estimated Parameters

| <u>Parameter</u> | <u>Estimate</u> | |
|------------------|-----------------|--------|
| K | 0.0005724 | cm/sec |
| y0 | 3.652 | ft |



LEAD PRODUCTS COMPANY

Data Set: H:\GEP\HERMIT\LEADPROD\MW02O.AQT

Date: 07/30/98

Time: 17:18:48

PROJECT INFORMATION

Company: Roy F. Weston, Inc.

Client: Lead Products, Houston TX

Test Well: MW02

Test Date: 06-15-98

AQUIFER DATA

Saturated Thickness: 8. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Initial Displacement: 1.679 ft

Casing Radius: 0.333 ft

Screen Length: 10. ft

Water Column Height: 8. ft

Wellbore Radius: 0.666 ft

Gravel Pack Porosity: 0.35

SOLUTION

Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

K = 0.001418 cm/sec

y0 = 1.46 ft

Data Set: H:\GEP\HERMIT\LEADPROD\MW02O.AQT
Title: Lead Products Company
Date: 07/30/98
Time: 17:18:54

PROJECT INFORMATION

Company: Roy F. Weston, Inc.
Client: Lead Products, Houston TX
Test Date: 06-15-98
Test Well: MW02

AQUIFER DATA

Saturated Thickness: 8 ft
Anisotropy Ratio (Kz/Kr): 1

OBSERVATION WELL DATA

Number of observation wells: 1

Observation Well No. 1: MW02

X Location: 0 ft
Y Location: 0 ft

| Observation Data | |
|------------------|-------------------|
| Time (min) | Displacement (ft) |
| 0.07 | 1.679 |
| 0.0733 | 1.679 |
| 0.0766 | 1.664 |
| 0.08 | 1.648 |
| 0.0833 | 1.648 |
| 0.0866 | 1.648 |
| 0.09 | 1.648 |
| 0.0933 | 1.648 |
| 0.0966 | 1.632 |
| 0.1 | 1.632 |
| 0.1033 | 1.632 |
| 0.1066 | 1.632 |
| 0.11 | 1.632 |
| 0.1133 | 1.632 |
| 0.1166 | 1.632 |
| 0.12 | 1.632 |
| 0.1233 | 1.632 |
| 0.1266 | 1.616 |
| 0.13 | 1.632 |
| 0.1333 | 1.632 |
| 0.1366 | 1.616 |

| | |
|--------|-------|
| 0.14 | 1.616 |
| 0.1433 | 1.616 |
| 0.1466 | 1.616 |
| 0.15 | 1.616 |
| 0.1533 | 1.6 |
| 0.1566 | 1.616 |
| 0.16 | 1.616 |
| 0.1633 | 1.6 |
| 0.1666 | 1.6 |
| 0.17 | 1.6 |
| 0.1733 | 1.6 |
| 0.1766 | 1.6 |
| 0.18 | 1.6 |
| 0.1833 | 1.6 |
| 0.1866 | 1.584 |
| 0.19 | 1.584 |
| 0.1933 | 1.584 |
| 0.1966 | 1.584 |
| 0.2 | 1.584 |
| 0.2033 | 1.584 |
| 0.2066 | 1.568 |
| 0.21 | 1.584 |
| 0.2133 | 1.584 |
| 0.2166 | 1.584 |
| 0.22 | 1.584 |
| 0.2233 | 1.584 |
| 0.2266 | 1.568 |
| 0.23 | 1.568 |
| 0.2333 | 1.568 |
| 0.2366 | 1.568 |
| 0.24 | 1.568 |
| 0.2433 | 1.568 |
| 0.2466 | 1.568 |
| 0.25 | 1.568 |
| 0.2533 | 1.568 |
| 0.2566 | 1.568 |
| 0.26 | 1.568 |
| 0.2633 | 1.553 |
| 0.2666 | 1.553 |
| 0.27 | 1.553 |
| 0.2733 | 1.553 |
| 0.2766 | 1.553 |
| 0.28 | 1.553 |
| 0.2833 | 1.553 |
| 0.2866 | 1.553 |
| 0.29 | 1.553 |
| 0.2933 | 1.553 |
| 0.2966 | 1.553 |
| 0.3 | 1.553 |

| | |
|--------|-------|
| 0.3033 | 1.537 |
| 0.3066 | 1.537 |
| 0.31 | 1.537 |
| 0.3133 | 1.537 |
| 0.3166 | 1.537 |
| 0.32 | 1.537 |
| 0.3233 | 1.537 |
| 0.3266 | 1.537 |
| 0.33 | 1.537 |
| 0.3333 | 1.537 |
| 0.35 | 1.521 |
| 0.3666 | 1.521 |
| 0.3833 | 1.505 |
| 0.4 | 1.505 |
| 0.4166 | 1.505 |
| 0.4333 | 1.489 |
| 0.45 | 1.489 |
| 0.4666 | 1.473 |
| 0.4833 | 1.473 |
| 0.5 | 1.473 |
| 0.5166 | 1.458 |
| 0.5333 | 1.458 |
| 0.55 | 1.442 |
| 0.5666 | 1.442 |
| 0.5833 | 1.426 |
| 0.6 | 1.426 |
| 0.6166 | 1.426 |
| 0.6333 | 1.41 |
| 0.65 | 1.41 |
| 0.6666 | 1.394 |
| 0.6833 | 1.394 |
| 0.7 | 1.394 |
| 0.7166 | 1.394 |
| 0.7333 | 1.378 |
| 0.75 | 1.378 |
| 0.7666 | 1.362 |
| 0.7833 | 1.362 |
| 0.8 | 1.362 |
| 0.8166 | 1.347 |
| 0.8333 | 1.347 |
| 0.85 | 1.347 |
| 0.8666 | 1.331 |
| 0.8833 | 1.331 |
| 0.9 | 1.331 |
| 0.9166 | 1.331 |
| 0.9333 | 1.315 |
| 0.95 | 1.299 |
| 0.9666 | 1.299 |
| 0.9833 | 1.299 |

| | |
|-----|-------|
| 1. | 1.299 |
| 1.2 | 1.236 |
| 1.4 | 1.188 |
| 1.6 | 1.156 |
| 1.8 | 1.109 |
| 2. | 1.077 |
| 2.2 | 1.061 |
| 2.4 | 1.03 |
| 2.6 | 0.998 |
| 2.8 | 0.966 |
| 3. | 0.95 |
| 3.2 | 0.919 |
| 3.4 | 0.903 |
| 3.6 | 0.871 |
| 3.8 | 0.855 |
| 4. | 0.824 |
| 4.2 | 0.792 |
| 4.4 | 0.776 |
| 4.6 | 0.76 |
| 4.8 | 0.744 |
| 5. | 0.713 |
| 5.2 | 0.697 |
| 5.4 | 0.681 |
| 5.6 | 0.665 |
| 5.8 | 0.649 |
| 6. | 0.633 |
| 6.2 | 0.602 |
| 6.4 | 0.602 |
| 6.6 | 0.586 |
| 6.8 | 0.57 |
| 7. | 0.554 |
| 7.2 | 0.554 |
| 7.4 | 0.538 |
| 7.6 | 0.523 |
| 7.8 | 0.507 |
| 8. | 0.491 |
| 8.2 | 0.491 |
| 8.4 | 0.475 |
| 8.6 | 0.459 |
| 8.8 | 0.443 |
| 9. | 0.427 |
| 9.2 | 0.427 |
| 9.4 | 0.412 |
| 9.6 | 0.412 |
| 9.8 | 0.396 |
| 10. | 0.38 |
| 12. | 0.332 |
| 14. | 0.269 |
| 16. | 0.206 |

| | |
|-----|-------|
| 18. | 0.19 |
| 20. | 0.158 |
| 22. | 0.142 |
| 24. | 0.095 |
| 26. | 0.111 |
| 28. | 0.095 |
| 30. | 0.095 |
| 32. | 0.095 |
| 34. | 0.095 |
| 36. | 0.095 |

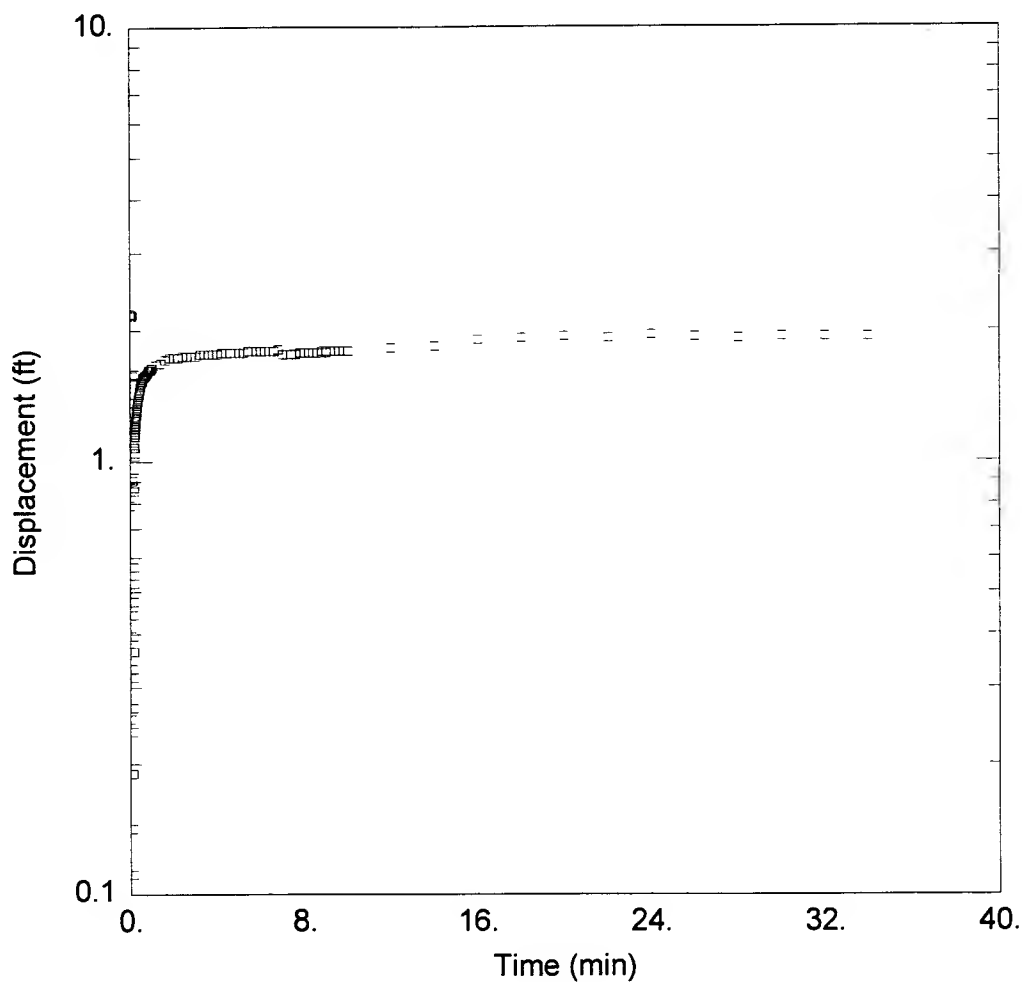
SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

VISUAL ESTIMATION RESULTS

Estimated Parameters

| <u>Parameter</u> | <u>Estimate</u> | |
|------------------|-----------------|--------|
| K | 0.001418 | cm/sec |
| y0 | 1.46 | ft |



LEAD PRODUCTS COMPANY

Data Set: H:\JSWLEADPROD\MW03I.AQT

Date: 04/29/99

Time: 14:28:34

PROJECT INFORMATION

Company: Roy F. Weston, Inc.

Client: Lead Products

Test Well: MW03

Test Date: 06-15-98

AQUIFER DATA

Saturated Thickness: 8. ft

Anisotropy Ratio (K_z/K_r): 1.

WELL DATA

Initial Displacement: 0.792 ft

Water Column Height: 8. ft

Casing Radius: 0.333 ft

Wellbore Radius: 0.666 ft

Screen Length: 10. ft

Gravel Pack Porosity: 0.35

SOLUTION

Aquifer Model: Confined

$K = 0.001369$ cm/sec

Solution Method: Bouwer-Rice

$y_0 = 0.6884$ ft

Data Set: H:\JMWLEADPROD\MW03I.AQT
Title: Lead Products Company
Date: 04/29/99
Time: 14:17:59

PROJECT INFORMATION

Company: Roy F. Weston, Inc.
Client: Lead Products
Project: 10513-001-002-0070
Location: Houston, TX
Test Date: 06-15-98
Test Well: MW03

AQUIFER DATA

Saturated Thickness: 8 ft
Anisotropy Ratio (Kz/Kr): 1

OBSERVATION WELL DATA

Number of observation wells: 1

Observation Well No. 1: MW03

X Location: 0 ft
Y Location: 0 ft

| Observation Data | |
|------------------|-------------------|
| Time (min) | Displacement (ft) |
| 0. | 2.187 |
| 0.0033 | 2.171 |
| 0.0066 | 2.155 |
| 0.01 | 2.171 |
| 0.0133 | 2.171 |
| 0.0166 | 2.171 |
| 0.02 | 2.171 |
| 0.0233 | 2.171 |
| 0.0266 | 2.171 |
| 0.03 | 2.171 |
| 0.0333 | 2.171 |
| 0.0366 | 2.171 |
| 0.04 | 2.171 |
| 0.0433 | 2.171 |
| 0.0466 | 2.171 |
| 0.05 | 2.171 |
| 0.0533 | 2.171 |
| 0.0566 | 2.171 |
| 0.06 | 2.171 |

| | |
|--------|-------|
| 0.0633 | 2.171 |
| 0.0666 | 2.171 |
| 0.07 | 2.171 |
| 0.0733 | 2.171 |
| 0.0766 | 2.171 |
| 0.08 | 2.171 |
| 0.0833 | 2.171 |
| 0.0866 | 2.171 |
| 0.09 | 2.171 |
| 0.0933 | 2.155 |
| 0.0966 | 2.171 |
| 0.1 | 2.171 |
| 0.1033 | 2.171 |
| 0.1066 | 1.569 |
| 0.11 | 1.363 |
| 0.1133 | 0.903 |
| 0.1166 | 0.253 |
| 0.12 | 0.142 |
| 0.1233 | 0.063 |
| 0.1266 | 0. |
| 0.13 | 0.19 |
| 0.1333 | 0.19 |
| 0.1366 | 0.111 |
| 0.14 | 0.19 |
| 0.1433 | 0.19 |
| 0.1466 | 0.332 |
| 0.15 | 0.396 |
| 0.1533 | 0.269 |
| 0.1566 | 0.364 |
| 0.16 | 0.237 |
| 0.1633 | 0.364 |
| 0.1666 | 0.443 |
| 0.17 | 0.317 |
| 0.1733 | 0.364 |
| 0.1766 | 0.475 |
| 0.18 | 0.364 |
| 0.1833 | 0.523 |
| 0.1866 | 0.57 |
| 0.19 | 0.871 |
| 0.1933 | 0.919 |
| 0.1966 | 1.077 |
| 0.2 | 1.584 |
| 0.2033 | 1.157 |
| 0.2066 | 0.855 |
| 0.21 | 1.109 |
| 0.2133 | 1.093 |
| 0.2166 | 1.077 |
| 0.22 | 1.172 |
| 0.2233 | 1.046 |

| | |
|--------|-------|
| 0.2266 | 1.141 |
| 0.23 | 1.03 |
| 0.2333 | 1.22 |
| 0.2366 | 1.157 |
| 0.24 | 1.157 |
| 0.2433 | 1.188 |
| 0.2466 | 1.172 |
| 0.25 | 1.188 |
| 0.2533 | 1.188 |
| 0.2566 | 1.204 |
| 0.26 | 1.204 |
| 0.2633 | 1.22 |
| 0.2666 | 1.22 |
| 0.27 | 1.236 |
| 0.2733 | 1.236 |
| 0.2766 | 1.236 |
| 0.28 | 1.252 |
| 0.2833 | 1.252 |
| 0.2866 | 1.267 |
| 0.29 | 1.267 |
| 0.2933 | 1.267 |
| 0.2966 | 1.283 |
| 0.3 | 1.283 |
| 0.3033 | 1.283 |
| 0.3066 | 1.299 |
| 0.31 | 1.299 |
| 0.3133 | 1.299 |
| 0.3166 | 1.315 |
| 0.32 | 1.315 |
| 0.3233 | 1.315 |
| 0.3266 | 1.347 |
| 0.33 | 1.331 |
| 0.3333 | 1.331 |
| 0.35 | 1.363 |
| 0.3666 | 1.378 |
| 0.3833 | 1.394 |
| 0.4 | 1.41 |
| 0.4166 | 1.426 |
| 0.4333 | 1.442 |
| 0.45 | 1.458 |
| 0.4666 | 1.473 |
| 0.4833 | 1.489 |
| 0.5 | 1.521 |
| 0.5166 | 1.505 |
| 0.5333 | 1.521 |
| 0.55 | 1.521 |
| 0.5666 | 1.521 |
| 0.5833 | 1.537 |
| 0.6 | 1.553 |

| | |
|--------|-------|
| 0.6166 | 1.553 |
| 0.6333 | 1.553 |
| 0.65 | 1.553 |
| 0.6666 | 1.569 |
| 0.6833 | 1.569 |
| 0.7 | 1.569 |
| 0.7166 | 1.569 |
| 0.7333 | 1.569 |
| 0.75 | 1.584 |
| 0.7666 | 1.584 |
| 0.7833 | 1.584 |
| 0.8 | 1.6 |
| 0.8166 | 1.6 |
| 0.8333 | 1.6 |
| 0.85 | 1.616 |
| 0.8666 | 1.616 |
| 0.8833 | 1.616 |
| 0.9 | 1.616 |
| 0.9166 | 1.616 |
| 0.9333 | 1.616 |
| 0.95 | 1.616 |
| 0.9666 | 1.632 |
| 0.9833 | 1.632 |
| 1. | 1.632 |
| 1.2 | 1.664 |
| 1.4 | 1.679 |
| 1.6 | 1.711 |
| 1.8 | 1.727 |
| 2. | 1.727 |
| 2.2 | 1.727 |
| 2.4 | 1.743 |
| 2.6 | 1.743 |
| 2.8 | 1.743 |
| 3. | 1.743 |
| 3.2 | 1.759 |
| 3.4 | 1.759 |
| 3.6 | 1.759 |
| 3.8 | 1.759 |
| 4. | 1.759 |
| 4.2 | 1.775 |
| 4.4 | 1.775 |
| 4.6 | 1.775 |
| 4.8 | 1.775 |
| 5. | 1.775 |
| 5.2 | 1.775 |
| 5.4 | 1.79 |
| 5.6 | 1.79 |
| 5.8 | 1.79 |
| 6. | 1.79 |

| | |
|-----|-------|
| 6.2 | 1.79 |
| 6.4 | 1.79 |
| 6.6 | 1.79 |
| 6.8 | 1.806 |
| 7. | 1.759 |
| 7.2 | 1.759 |
| 7.4 | 1.759 |
| 7.6 | 1.759 |
| 7.8 | 1.775 |
| 8. | 1.775 |
| 8.2 | 1.775 |
| 8.4 | 1.775 |
| 8.6 | 1.775 |
| 8.8 | 1.79 |
| 9. | 1.775 |
| 9.2 | 1.79 |
| 9.4 | 1.79 |
| 9.6 | 1.79 |
| 9.8 | 1.79 |
| 10. | 1.79 |
| 12. | 1.822 |
| 14. | 1.838 |
| 16. | 1.901 |
| 18. | 1.917 |
| 20. | 1.933 |
| 22. | 1.917 |
| 24. | 1.949 |
| 26. | 1.933 |
| 28. | 1.917 |
| 30. | 1.933 |
| 32. | 1.933 |
| 34. | 1.933 |

SOLUTION

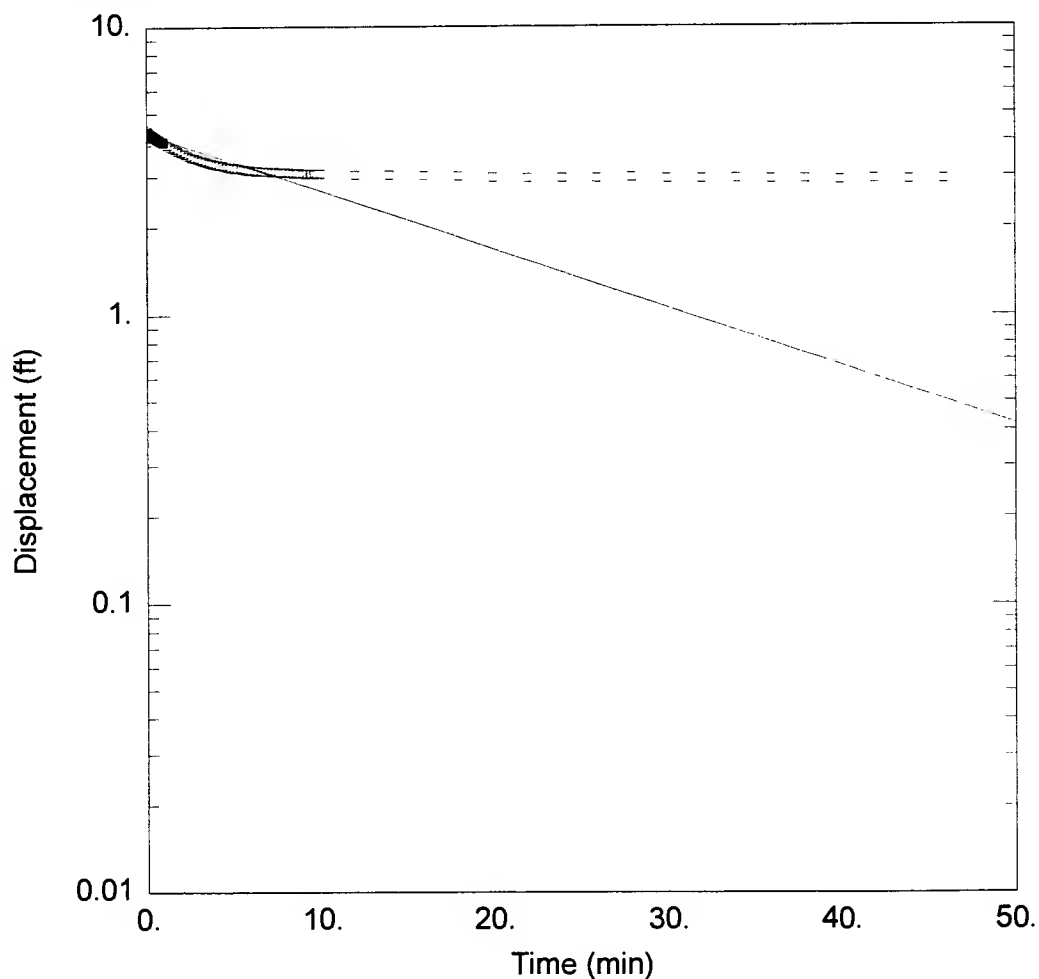
Aquifer Model: Confined

Solution Method: Bouwer-Rice

VISUAL ESTIMATION RESULTS

Estimated Parameters

| Parameter | Estimate | |
|-----------|----------|--------|
| K | 0.001369 | cm/sec |
| y0 | 0.6884 | ft |



LEAD PRODUCTS COMPANY

Data Set: H:\JSWLEADPROD\MW03O.AQT

Date: 04/29/99

Time: 14:19:24

PROJECT INFORMATION

Company: Roy F. Weston, Inc.

Client: Lead Products, Houston TX

Test Well: MW03

Test Date: 06-15-98

AQUIFER DATA

Saturated Thickness: 8. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Initial Displacement: 4.4 ft

Water Column Height: 8. ft

Casing Radius: 0.333 ft

Wellbore Radius: 0.666 ft

Screen Length: 10. ft

Gravel Pack Porosity: 0.35

SOLUTION

Aquifer Model: Unconfined

K = 0.0004927 cm/sec

Solution Method: Bouwer-Rice

y0 = 4.245 ft

Data Set: H:\JWLEADPROD\MW03O.AQT
Title: Lead Products Company
Date: 04/29/99
Time: 14:19:10

PROJECT INFORMATION

Company: Roy F. Weston, Inc.
Client: Lead Products, Houston TX
Test Date: 06-15-98
Test Well: MW03

AQUIFER DATA

Saturated Thickness: 8 ft
Anisotropy Ratio (K_z/K_r): 1

OBSERVATION WELL DATA

Number of observation wells: 1

Observation Well No. 1: MW03

X Location: 0 ft
Y Location: 0 ft

| Observation Data | |
|------------------|-------------------|
| Time (min) | Displacement (ft) |
| 0. | 4.009 |
| 0.0033 | 4.326 |
| 0.0067 | 4.342 |
| 0.01 | 4.342 |
| 0.0133 | 4.342 |
| 0.0167 | 4.326 |
| 0.02 | 4.342 |
| 0.0233 | 4.326 |
| 0.0267 | 4.326 |
| 0.03 | 4.326 |
| 0.0333 | 4.326 |
| 0.0367 | 4.326 |
| 0.04 | 4.326 |
| 0.0433 | 4.326 |
| 0.0467 | 4.342 |
| 0.05 | 4.326 |
| 0.0533 | 4.326 |
| 0.0567 | 4.31 |
| 0.06 | 4.31 |
| 0.0633 | 4.31 |
| 0.0667 | 4.294 |

| | |
|--------|-------|
| 0.07 | 4.294 |
| 0.0733 | 4.31 |
| 0.0767 | 4.31 |
| 0.08 | 4.294 |
| 0.0833 | 4.294 |
| 0.0867 | 4.294 |
| 0.09 | 4.278 |
| 0.0933 | 4.294 |
| 0.0967 | 4.278 |
| 0.1 | 4.278 |
| 0.1033 | 4.294 |
| 0.1067 | 4.278 |
| 0.11 | 4.278 |
| 0.1133 | 4.278 |
| 0.1167 | 4.278 |
| 0.12 | 4.278 |
| 0.1233 | 4.262 |
| 0.1267 | 4.278 |
| 0.13 | 4.262 |
| 0.1333 | 4.262 |
| 0.1367 | 4.262 |
| 0.14 | 4.262 |
| 0.1433 | 4.262 |
| 0.1467 | 4.262 |
| 0.15 | 4.262 |
| 0.1533 | 4.262 |
| 0.1567 | 4.262 |
| 0.16 | 4.262 |
| 0.1633 | 4.262 |
| 0.1667 | 4.246 |
| 0.17 | 4.262 |
| 0.1733 | 4.246 |
| 0.1767 | 4.246 |
| 0.18 | 4.246 |
| 0.1833 | 4.246 |
| 0.1867 | 4.246 |
| 0.19 | 4.246 |
| 0.1933 | 4.246 |
| 0.1967 | 4.246 |
| 0.2 | 4.246 |
| 0.2033 | 4.246 |
| 0.2067 | 4.246 |
| 0.21 | 4.231 |
| 0.2133 | 4.231 |
| 0.2167 | 4.231 |
| 0.22 | 4.231 |
| 0.2233 | 4.231 |
| 0.2267 | 4.231 |
| 0.23 | 4.231 |

| | |
|--------|-------|
| 0.2333 | 4.231 |
| 0.2367 | 4.231 |
| 0.24 | 4.231 |
| 0.2433 | 4.215 |
| 0.2467 | 4.215 |
| 0.25 | 4.215 |
| 0.2533 | 4.215 |
| 0.2567 | 4.215 |
| 0.26 | 4.215 |
| 0.2633 | 4.215 |
| 0.2667 | 4.215 |
| 0.27 | 4.215 |
| 0.2733 | 4.215 |
| 0.2767 | 4.215 |
| 0.28 | 4.215 |
| 0.2833 | 4.215 |
| 0.2867 | 4.215 |
| 0.29 | 4.199 |
| 0.3067 | 4.199 |
| 0.3233 | 4.199 |
| 0.34 | 4.183 |
| 0.3567 | 4.183 |
| 0.3733 | 4.167 |
| 0.39 | 4.167 |
| 0.4067 | 4.151 |
| 0.4233 | 4.151 |
| 0.44 | 4.151 |
| 0.4567 | 4.136 |
| 0.4733 | 4.136 |
| 0.49 | 4.12 |
| 0.5067 | 4.12 |
| 0.5233 | 4.12 |
| 0.54 | 4.104 |
| 0.5567 | 4.104 |
| 0.5733 | 4.088 |
| 0.59 | 4.088 |
| 0.6067 | 4.072 |
| 0.6233 | 4.072 |
| 0.64 | 4.072 |
| 0.6567 | 4.056 |
| 0.6733 | 4.056 |
| 0.69 | 4.056 |
| 0.7067 | 4.04 |
| 0.7233 | 4.04 |
| 0.74 | 4.025 |
| 0.7567 | 4.025 |
| 0.7733 | 4.025 |
| 0.79 | 4.009 |
| 0.8067 | 4.009 |

| | |
|--------|-------|
| 0.8233 | 4.009 |
| 0.84 | 3.993 |
| 0.8567 | 3.993 |
| 0.8733 | 3.993 |
| 0.89 | 3.993 |
| 0.9067 | 3.977 |
| 0.9233 | 3.977 |
| 0.94 | 3.961 |
| 0.9567 | 3.961 |
| 1.157 | 3.882 |
| 1.357 | 3.819 |
| 1.557 | 3.771 |
| 1.757 | 3.708 |
| 1.957 | 3.66 |
| 2.157 | 3.613 |
| 2.357 | 3.565 |
| 2.557 | 3.518 |
| 2.757 | 3.486 |
| 2.957 | 3.454 |
| 3.157 | 3.422 |
| 3.357 | 3.391 |
| 3.557 | 3.359 |
| 3.757 | 3.343 |
| 3.957 | 3.312 |
| 4.157 | 3.296 |
| 4.357 | 3.28 |
| 4.557 | 3.248 |
| 4.757 | 3.232 |
| 4.957 | 3.216 |
| 5.157 | 3.216 |
| 5.357 | 3.201 |
| 5.557 | 3.185 |
| 5.757 | 3.169 |
| 5.957 | 3.169 |
| 6.157 | 3.153 |
| 6.357 | 3.153 |
| 6.557 | 3.137 |
| 6.757 | 3.137 |
| 6.957 | 3.137 |
| 7.157 | 3.121 |
| 7.357 | 3.121 |
| 7.557 | 3.121 |
| 7.757 | 3.106 |
| 7.957 | 3.106 |
| 8.157 | 3.106 |
| 8.357 | 3.09 |
| 8.557 | 3.09 |
| 8.757 | 3.09 |
| 8.957 | 3.074 |

| | |
|-------|-------|
| 9.157 | 3.074 |
| 9.357 | 3.074 |
| 9.557 | 3.074 |
| 9.757 | 3.074 |
| 9.957 | 3.074 |
| 11.96 | 3.042 |
| 13.96 | 3.042 |
| 15.96 | 3.026 |
| 17.96 | 3.01 |
| 19.96 | 2.979 |
| 21.96 | 2.963 |
| 23.96 | 2.963 |
| 25.96 | 2.963 |
| 27.96 | 2.979 |
| 29.96 | 2.947 |
| 31.96 | 2.947 |
| 33.96 | 2.947 |
| 35.96 | 2.931 |
| 37.96 | 2.931 |
| 39.96 | 2.9 |
| 41.96 | 2.931 |
| 43.96 | 2.915 |
| 45.96 | 2.915 |

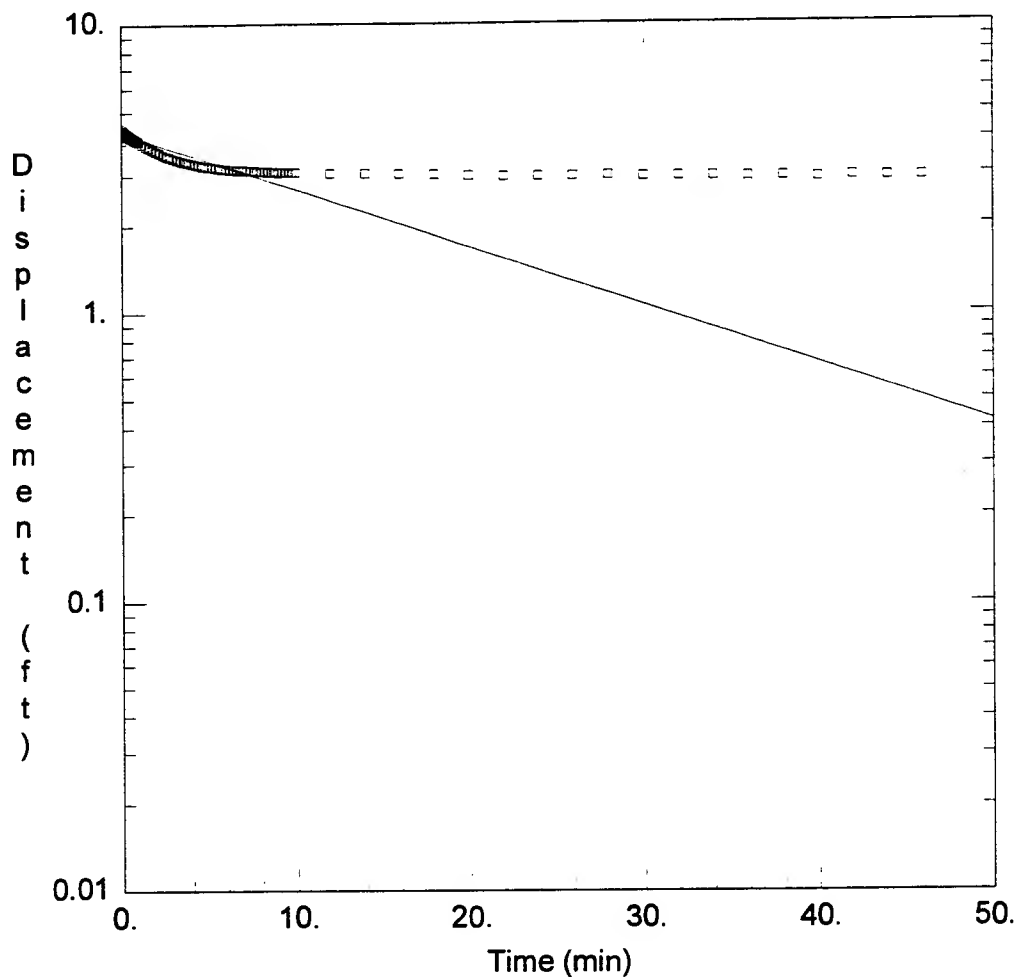
SOLUTION

Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

VISUAL ESTIMATION RESULTS**Estimated Parameters**

| Parameter | Estimate | |
|-----------|-----------|--------|
| K | 0.0004927 | cm/sec |
| y0 | 4.245 | ft |



LEAD PRODUCTS COMPANY

Data Set: H:\GEP\HERMIT\LEADPROD\MW03O.AQT

Date: 07/30/98

Time: 17:19:43

PROJECT INFORMATION

Company: Roy F. Weston, Inc.

Client: Lead Products, Houston TX

Test Well: MW03

Test Date: 06-15-98

AQUIFER DATA

Saturated Thickness: 8. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Initial Displacement: 4.4 ft

Water Column Height: 8. ft

Casing Radius: 0.333 ft

Wellbore Radius: 0.666 ft

Screen Length: 10. ft

Gravel Pack Porosity: 0.35

SOLUTION

Aquifer Model: Unconfined

K = 0.0004927 cm/sec

Solution Method: Bouwer-Rice

y0 = 4.245 ft

Data Set: H:\GEP\HERMIT\LEADPROD\MW03O.AQT
Title: Lead Products Company
Date: 07/30/98
Time: 17:19:57

PROJECT INFORMATION

Company: Roy F. Weston, Inc.
Client: Lead Products, Houston TX
Test Date: 06-15-98
Test Well: MW03

AQUIFER DATA

Saturated Thickness: 8 ft
Anisotropy Ratio (Kz/Kr): 1

OBSERVATION WELL DATA

Number of observation wells: 1

Observation Well No. 1: MW03

X Location: 0 ft
Y Location: 0 ft

| <u>Observation Data</u> | |
|-------------------------|--------------------------|
| <u>Time (min)</u> | <u>Displacement (ft)</u> |
| 0. | 4.009 |
| 0.0033 | 4.326 |
| 0.0067 | 4.342 |
| 0.01 | 4.342 |
| 0.0133 | 4.342 |
| 0.0167 | 4.326 |
| 0.02 | 4.342 |
| 0.0233 | 4.326 |
| 0.0267 | 4.326 |
| 0.03 | 4.326 |
| 0.0333 | 4.326 |
| 0.0367 | 4.326 |
| 0.04 | 4.326 |
| 0.0433 | 4.326 |
| 0.0467 | 4.342 |
| 0.05 | 4.326 |
| 0.0533 | 4.326 |
| 0.0567 | 4.31 |
| 0.06 | 4.31 |
| 0.0633 | 4.31 |
| 0.0667 | 4.294 |

| | |
|--------|-------|
| 0.07 | 4.294 |
| 0.0733 | 4.31 |
| 0.0767 | 4.31 |
| 0.08 | 4.294 |
| 0.0833 | 4.294 |
| 0.0867 | 4.294 |
| 0.09 | 4.278 |
| 0.0933 | 4.294 |
| 0.0967 | 4.278 |
| 0.1 | 4.278 |
| 0.1033 | 4.294 |
| 0.1067 | 4.278 |
| 0.11 | 4.278 |
| 0.1133 | 4.278 |
| 0.1167 | 4.278 |
| 0.12 | 4.278 |
| 0.1233 | 4.262 |
| 0.1267 | 4.278 |
| 0.13 | 4.262 |
| 0.1333 | 4.262 |
| 0.1367 | 4.262 |
| 0.14 | 4.262 |
| 0.1433 | 4.262 |
| 0.1467 | 4.262 |
| 0.15 | 4.262 |
| 0.1533 | 4.262 |
| 0.1567 | 4.262 |
| 0.16 | 4.262 |
| 0.1633 | 4.262 |
| 0.1667 | 4.246 |
| 0.17 | 4.262 |
| 0.1733 | 4.246 |
| 0.1767 | 4.246 |
| 0.18 | 4.246 |
| 0.1833 | 4.246 |
| 0.1867 | 4.246 |
| 0.19 | 4.246 |
| 0.1933 | 4.246 |
| 0.1967 | 4.246 |
| 0.2 | 4.246 |
| 0.2033 | 4.246 |
| 0.2067 | 4.246 |
| 0.21 | 4.231 |
| 0.2133 | 4.231 |
| 0.2167 | 4.231 |
| 0.22 | 4.231 |
| 0.2233 | 4.231 |
| 0.2267 | 4.231 |
| 0.23 | 4.231 |

| | |
|--------|-------|
| 0.2333 | 4.231 |
| 0.2367 | 4.231 |
| 0.24 | 4.231 |
| 0.2433 | 4.215 |
| 0.2467 | 4.215 |
| 0.25 | 4.215 |
| 0.2533 | 4.215 |
| 0.2567 | 4.215 |
| 0.26 | 4.215 |
| 0.2633 | 4.215 |
| 0.2667 | 4.215 |
| 0.27 | 4.215 |
| 0.2733 | 4.215 |
| 0.2767 | 4.215 |
| 0.28 | 4.215 |
| 0.2833 | 4.215 |
| 0.2867 | 4.215 |
| 0.29 | 4.199 |
| 0.3067 | 4.199 |
| 0.3233 | 4.199 |
| 0.34 | 4.183 |
| 0.3567 | 4.183 |
| 0.3733 | 4.167 |
| 0.39 | 4.167 |
| 0.4067 | 4.151 |
| 0.4233 | 4.151 |
| 0.44 | 4.151 |
| 0.4567 | 4.136 |
| 0.4733 | 4.136 |
| 0.49 | 4.12 |
| 0.5067 | 4.12 |
| 0.5233 | 4.12 |
| 0.54 | 4.104 |
| 0.5567 | 4.104 |
| 0.5733 | 4.088 |
| 0.59 | 4.088 |
| 0.6067 | 4.072 |
| 0.6233 | 4.072 |
| 0.64 | 4.072 |
| 0.6567 | 4.056 |
| 0.6733 | 4.056 |
| 0.69 | 4.056 |
| 0.7067 | 4.04 |
| 0.7233 | 4.04 |
| 0.74 | 4.025 |
| 0.7567 | 4.025 |
| 0.7733 | 4.025 |
| 0.79 | 4.009 |
| 0.8067 | 4.009 |

| | |
|--------|-------|
| 0.8233 | 4.009 |
| 0.84 | 3.993 |
| 0.8567 | 3.993 |
| 0.8733 | 3.993 |
| 0.89 | 3.993 |
| 0.9067 | 3.977 |
| 0.9233 | 3.977 |
| 0.94 | 3.961 |
| 0.9567 | 3.961 |
| 1.157 | 3.882 |
| 1.357 | 3.819 |
| 1.557 | 3.771 |
| 1.757 | 3.708 |
| 1.957 | 3.66 |
| 2.157 | 3.613 |
| 2.357 | 3.565 |
| 2.557 | 3.518 |
| 2.757 | 3.486 |
| 2.957 | 3.454 |
| 3.157 | 3.422 |
| 3.357 | 3.391 |
| 3.557 | 3.359 |
| 3.757 | 3.343 |
| 3.957 | 3.312 |
| 4.157 | 3.296 |
| 4.357 | 3.28 |
| 4.557 | 3.248 |
| 4.757 | 3.232 |
| 4.957 | 3.216 |
| 5.157 | 3.216 |
| 5.357 | 3.201 |
| 5.557 | 3.185 |
| 5.757 | 3.169 |
| 5.957 | 3.169 |
| 6.157 | 3.153 |
| 6.357 | 3.153 |
| 6.557 | 3.137 |
| 6.757 | 3.137 |
| 6.957 | 3.137 |
| 7.157 | 3.121 |
| 7.357 | 3.121 |
| 7.557 | 3.121 |
| 7.757 | 3.106 |
| 7.957 | 3.106 |
| 8.157 | 3.106 |
| 8.357 | 3.09 |
| 8.557 | 3.09 |
| 8.757 | 3.09 |
| 8.957 | 3.074 |

| | |
|-------|-------|
| 9.157 | 3.074 |
| 9.357 | 3.074 |
| 9.557 | 3.074 |
| 9.757 | 3.074 |
| 9.957 | 3.074 |
| 11.96 | 3.042 |
| 13.96 | 3.042 |
| 15.96 | 3.026 |
| 17.96 | 3.01 |
| 19.96 | 2.979 |
| 21.96 | 2.963 |
| 23.96 | 2.963 |
| 25.96 | 2.963 |
| 27.96 | 2.979 |
| 29.96 | 2.947 |
| 31.96 | 2.947 |
| 33.96 | 2.947 |
| 35.96 | 2.931 |
| 37.96 | 2.931 |
| 39.96 | 2.9 |
| 41.96 | 2.931 |
| 43.96 | 2.915 |
| 45.96 | 2.915 |

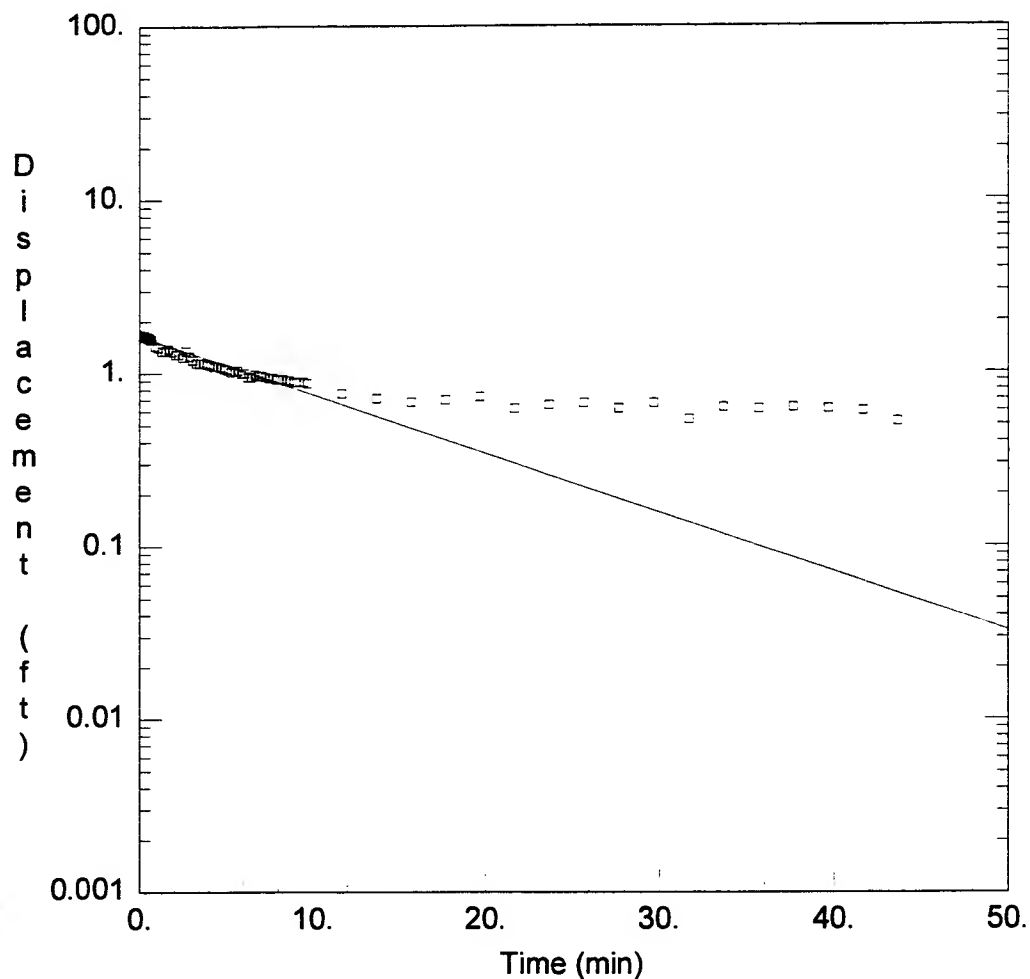
SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

VISUAL ESTIMATION RESULTS

Estimated Parameters

| <u>Parameter</u> | <u>Estimate</u> | |
|------------------|-----------------|--------|
| K | 0.0004927 | cm/sec |
| y0 | 4.245 | ft |



LEAD PRODUCTS COMPANY

Data Set: H:\GEP\HERMIT\LEADPROD\MW05\AQT

Date: 07/30/98

Time: 17:20:26

PROJECT INFORMATION

Company: Roy F. Weston, Inc.

Client: Lead Products, Houston TX

Test Well: MW05

Test Date: 06-15-98

AQUIFER DATA

Saturated Thickness: 8. ft

Anisotropy Ratio (K_z/K_r): 1.

WELL DATA

Initial Displacement: 1.695 ft

Water Column Height: 8. ft

Casing Radius: 0.333 ft

Wellbore Radius: 0.666 ft

Screen Length: 10. ft

Gravel Pack Porosity: 0.35

SOLUTION

Aquifer Model: Unconfined

$K = 0.0008332$ cm/sec

Solution Method: Bouwer-Rice

$y_0 = 1.642$ ft

Data Set: H:\GEP\HERMIT\LEADPROD\MW05\AQT
Title: Lead Products Company
Date: 07/30/98
Time: 17:20:30

PROJECT INFORMATION

Company: Roy F. Weston, Inc.
Client: Lead Products, Houston TX
Test Date: 06-15-98
Test Well: MW05

AQUIFER DATA

Saturated Thickness: 8 ft
Anisotropy Ratio (Kz/Kr): 1

OBSERVATION WELL DATA

Number of observation wells: 1

Observation Well No. 1: MW05

X Location: 0 ft

Y Location: 0 ft

| <u>Observation Data</u> | |
|-------------------------|--------------------------|
| <u>Time (min)</u> | <u>Displacement (ft)</u> |
| 0. | 1.695 |
| 0.0034 | 1.664 |
| 0.0067 | 1.664 |
| 0.0234 | 1.648 |
| 0.04 | 1.648 |
| 0.0567 | 1.664 |
| 0.0734 | 1.648 |
| 0.09 | 1.648 |
| 0.1067 | 1.664 |
| 0.1234 | 1.648 |
| 0.14 | 1.632 |
| 0.1567 | 1.632 |
| 0.1734 | 1.632 |
| 0.19 | 1.632 |
| 0.2067 | 1.648 |
| 0.2234 | 1.648 |
| 0.24 | 1.664 |
| 0.2567 | 1.664 |
| 0.2734 | 1.648 |
| 0.29 | 1.648 |
| 0.3067 | 1.648 |

| | |
|--------|-------|
| 0.3234 | 1.632 |
| 0.34 | 1.632 |
| 0.3567 | 1.632 |
| 0.3734 | 1.632 |
| 0.39 | 1.632 |
| 0.4067 | 1.632 |
| 0.4234 | 1.616 |
| 0.44 | 1.632 |
| 0.4567 | 1.616 |
| 0.4734 | 1.632 |
| 0.49 | 1.616 |
| 0.5067 | 1.6 |
| 0.5234 | 1.6 |
| 0.54 | 1.616 |
| 0.5567 | 1.6 |
| 0.5734 | 1.6 |
| 0.59 | 1.6 |
| 0.6067 | 1.584 |
| 0.6234 | 1.569 |
| 0.64 | 1.569 |
| 0.6567 | 1.569 |
| 0.6734 | 1.569 |
| 0.8734 | 1.442 |
| 1.073 | 1.41 |
| 1.273 | 1.347 |
| 1.473 | 1.347 |
| 1.673 | 1.378 |
| 1.873 | 1.331 |
| 2.073 | 1.283 |
| 2.273 | 1.283 |
| 2.473 | 1.236 |
| 2.673 | 1.347 |
| 2.873 | 1.251 |
| 3.073 | 1.188 |
| 3.273 | 1.141 |
| 3.473 | 1.141 |
| 3.673 | 1.141 |
| 3.873 | 1.125 |
| 4.073 | 1.109 |
| 4.273 | 1.093 |
| 4.473 | 1.093 |
| 4.673 | 1.077 |
| 4.873 | 1.061 |
| 5.073 | 1.045 |
| 5.273 | 1.014 |
| 5.473 | 1.03 |
| 5.673 | 1.03 |
| 5.873 | 0.998 |
| 6.073 | 0.998 |

| | |
|-------|-------|
| 6.273 | 0.95 |
| 6.473 | 0.95 |
| 6.673 | 0.982 |
| 6.873 | 0.966 |
| 7.073 | 0.966 |
| 7.273 | 0.95 |
| 7.473 | 0.935 |
| 7.673 | 0.935 |
| 7.873 | 0.919 |
| 8.073 | 0.919 |
| 8.273 | 0.919 |
| 8.473 | 0.903 |
| 8.673 | 0.903 |
| 8.873 | 0.887 |
| 9.073 | 0.887 |
| 9.273 | 0.887 |
| 9.473 | 0.887 |
| 9.673 | 0.871 |
| 11.67 | 0.76 |
| 13.67 | 0.713 |
| 15.67 | 0.681 |
| 17.67 | 0.697 |
| 19.67 | 0.729 |
| 21.67 | 0.618 |
| 23.67 | 0.649 |
| 25.67 | 0.665 |
| 27.67 | 0.618 |
| 29.67 | 0.665 |
| 31.67 | 0.538 |
| 33.67 | 0.633 |
| 35.67 | 0.618 |
| 37.67 | 0.633 |
| 39.67 | 0.618 |
| 41.67 | 0.602 |
| 43.67 | 0.522 |

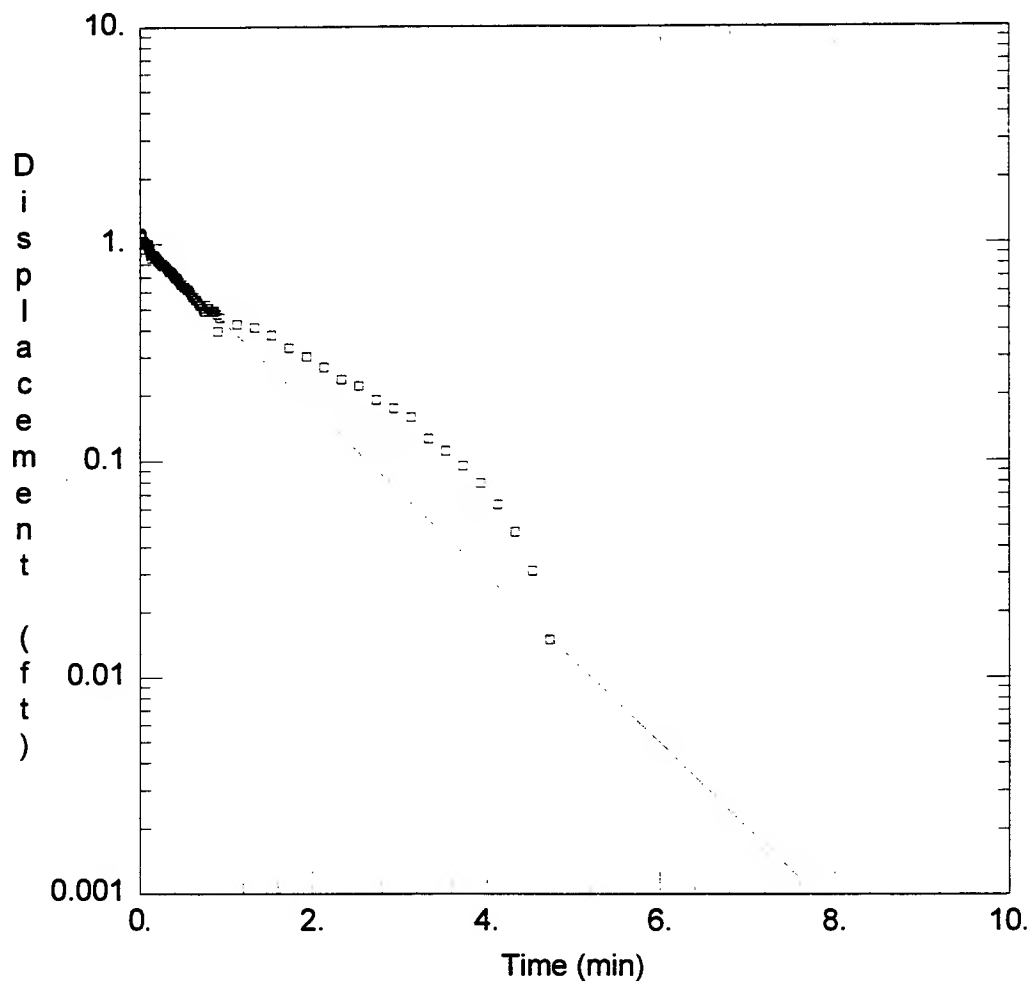
SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

VISUAL ESTIMATION RESULTS

Estimated Parameters

| <u>Parameter</u> | <u>Estimate</u> | |
|------------------|-----------------|--------|
| K | 0.0008332 | cm/sec |
| y0 | 1.642 | ft |



LEAD PRODUCTS COMPANY

Data Set: H:\GEP\HERMIT\LEADPROD\MW05O.AQT

Date: 07/30/98

Time: 17:21:26

PROJECT INFORMATION

Company: Roy F. Weston, Inc.

Client: Lead Products, Houston TX

Test Well: MW05

Test Date: 06-15-98

AQUIFER DATA

Saturated Thickness: 8. ft

Anisotropy Ratio (K_z/K_r): 1.

WELL DATA

Initial Displacement: 1.125 ft

Water Column Height: 8. ft

Casing Radius: 0.333 ft

Wellbore Radius: 0.666 ft

Screen Length: 10. ft

Gravel Pack Porosity: 0.35

SOLUTION

Aquifer Model: Unconfined

$K = 0.009485$ cm/sec

Solution Method: Bouwer-Rice

$y_0 = 1.037$ ft

Data Set: H:\GEP\HERMIT\LEADPROD\MW05O.AQT

Title: Lead Products Company

Date: 07/30/98

Time: 17:21:31

PROJECT INFORMATION

Company: Roy F. Weston, Inc.

Client: Lead Products, Houston TX

Test Date: 06-15-98

Test Well: MW05

AQUIFER DATA

Saturated Thickness: 8 ft

Anisotropy Ratio (K_z/K_r): 1

OBSERVATION WELL DATA

Number of observation wells: 1

Observation Well No. 1: MW05

X Location: 0 ft

Y Location: 0 ft

Observation Data

| <u>Time (min)</u> | <u>Displacement (ft)</u> |
|-------------------|--------------------------|
|-------------------|--------------------------|

| | |
|----|-------|
| 0. | 1.125 |
|----|-------|

| | |
|--------|-------|
| 0.0033 | 1.109 |
|--------|-------|

| | |
|--------|-------|
| 0.0067 | 1.109 |
|--------|-------|

| | |
|------|-------|
| 0.01 | 1.093 |
|------|-------|

| | |
|--------|-------|
| 0.0133 | 1.109 |
|--------|-------|

| | |
|--------|-------|
| 0.0167 | 1.093 |
|--------|-------|

| | |
|------|-------|
| 0.02 | 1.093 |
|------|-------|

| | |
|--------|-------|
| 0.0233 | 1.077 |
|--------|-------|

| | |
|--------|------|
| 0.0267 | 1.03 |
|--------|------|

| | |
|------|-------|
| 0.03 | 0.998 |
|------|-------|

| | |
|--------|-------|
| 0.0333 | 1.014 |
|--------|-------|

| | |
|--------|-------|
| 0.0367 | 1.014 |
|--------|-------|

| | |
|------|------|
| 0.04 | 1.03 |
|------|------|

| | |
|--------|------|
| 0.0433 | 1.03 |
|--------|------|

| | |
|--------|------|
| 0.0467 | 1.03 |
|--------|------|

| | |
|------|-------|
| 0.05 | 1.014 |
|------|-------|

| | |
|--------|-------|
| 0.0533 | 1.014 |
|--------|-------|

| | |
|--------|-------|
| 0.0567 | 1.014 |
|--------|-------|

| | |
|------|-------|
| 0.06 | 0.998 |
|------|-------|

| | |
|--------|-------|
| 0.0633 | 0.998 |
|--------|-------|

| | |
|--------|-------|
| 0.0667 | 0.998 |
|--------|-------|

| | |
|--------|-------|
| 0.07 | 0.998 |
| 0.0733 | 0.998 |
| 0.0767 | 0.998 |
| 0.08 | 0.998 |
| 0.0833 | 0.998 |
| 0.0867 | 0.998 |
| 0.09 | 0.982 |
| 0.0933 | 0.998 |
| 0.0967 | 0.982 |
| 0.1 | 0.966 |
| 0.1033 | 0.95 |
| 0.1067 | 0.966 |
| 0.11 | 0.95 |
| 0.1133 | 0.95 |
| 0.1167 | 0.919 |
| 0.12 | 0.887 |
| 0.1233 | 0.887 |
| 0.1267 | 0.887 |
| 0.13 | 0.855 |
| 0.1333 | 0.855 |
| 0.1367 | 0.887 |
| 0.14 | 0.887 |
| 0.1433 | 0.887 |
| 0.1467 | 0.887 |
| 0.15 | 0.903 |
| 0.1533 | 0.887 |
| 0.1567 | 0.887 |
| 0.16 | 0.887 |
| 0.1633 | 0.887 |
| 0.1667 | 0.887 |
| 0.17 | 0.871 |
| 0.1733 | 0.871 |
| 0.1767 | 0.871 |
| 0.18 | 0.855 |
| 0.1833 | 0.871 |
| 0.1867 | 0.855 |
| 0.19 | 0.855 |
| 0.1933 | 0.855 |
| 0.1967 | 0.855 |
| 0.2 | 0.839 |
| 0.2033 | 0.839 |
| 0.2067 | 0.839 |
| 0.21 | 0.839 |
| 0.2133 | 0.839 |
| 0.2167 | 0.839 |
| 0.22 | 0.824 |
| 0.2233 | 0.824 |
| 0.2267 | 0.824 |
| 0.23 | 0.824 |

| | |
|--------|-------|
| 0.2333 | 0.824 |
| 0.2367 | 0.808 |
| 0.24 | 0.808 |
| 0.2433 | 0.808 |
| 0.2467 | 0.808 |
| 0.25 | 0.808 |
| 0.2533 | 0.808 |
| 0.2567 | 0.792 |
| 0.26 | 0.792 |
| 0.2767 | 0.808 |
| 0.2933 | 0.792 |
| 0.31 | 0.776 |
| 0.3267 | 0.76 |
| 0.3433 | 0.744 |
| 0.36 | 0.744 |
| 0.3767 | 0.729 |
| 0.3933 | 0.713 |
| 0.41 | 0.697 |
| 0.4267 | 0.697 |
| 0.4433 | 0.681 |
| 0.46 | 0.665 |
| 0.4767 | 0.649 |
| 0.4933 | 0.649 |
| 0.51 | 0.633 |
| 0.5267 | 0.633 |
| 0.5433 | 0.618 |
| 0.56 | 0.618 |
| 0.5767 | 0.602 |
| 0.5933 | 0.586 |
| 0.61 | 0.57 |
| 0.6267 | 0.57 |
| 0.6433 | 0.554 |
| 0.66 | 0.554 |
| 0.6767 | 0.538 |
| 0.6933 | 0.523 |
| 0.71 | 0.523 |
| 0.7267 | 0.507 |
| 0.7433 | 0.491 |
| 0.76 | 0.491 |
| 0.7767 | 0.523 |
| 0.7933 | 0.507 |
| 0.81 | 0.507 |
| 0.8267 | 0.491 |
| 0.8433 | 0.491 |
| 0.86 | 0.491 |
| 0.8767 | 0.491 |
| 0.8933 | 0.475 |
| 0.91 | 0.396 |
| 0.9267 | 0.459 |

| | |
|-------|--------|
| 1.127 | 0.427 |
| 1.327 | 0.412 |
| 1.527 | 0.38 |
| 1.727 | 0.332 |
| 1.927 | 0.301 |
| 2.127 | 0.269 |
| 2.327 | 0.237 |
| 2.527 | 0.221 |
| 2.727 | 0.19 |
| 2.927 | 0.174 |
| 3.127 | 0.158 |
| 3.327 | 0.126 |
| 3.527 | 0.111 |
| 3.727 | 0.095 |
| 3.927 | 0.079 |
| 4.127 | 0.063 |
| 4.327 | 0.047 |
| 4.527 | 0.031 |
| 4.727 | 0.015 |
| 4.927 | 0. |
| 5.127 | -0.015 |
| 5.327 | -0.031 |
| 5.527 | -0.031 |
| 5.727 | -0.047 |
| 5.927 | -0.063 |
| 6.127 | -0.063 |
| 6.327 | -0.079 |
| 6.527 | -0.095 |
| 6.727 | -0.095 |
| 6.927 | -0.11 |
| 7.127 | -0.126 |
| 7.327 | -0.126 |
| 7.527 | -0.142 |
| 7.727 | -0.142 |
| 7.927 | -0.158 |
| 8.127 | -0.158 |
| 8.327 | -0.174 |
| 8.527 | -0.174 |
| 8.727 | -0.19 |
| 8.927 | -0.19 |
| 9.127 | -0.19 |
| 9.327 | -0.206 |
| 9.527 | -0.206 |
| 9.727 | -0.206 |
| 9.927 | -0.221 |
| 11.93 | -0.253 |
| 13.93 | -0.285 |
| 15.93 | -0.316 |
| 17.93 | -0.348 |

| | |
|-------|--------|
| 19.93 | -0.38 |
| 21.93 | -0.396 |
| 23.93 | -0.396 |
| 25.93 | -0.412 |
| 27.93 | -0.427 |
| 29.93 | -0.443 |
| 31.93 | -0.459 |
| 33.93 | -0.459 |
| 35.93 | -0.443 |
| 37.93 | -0.475 |
| 39.93 | -0.475 |
| 41.93 | -0.491 |
| 43.93 | -0.459 |

SOLUTION

Aquifer Model: Unconfined
 Solution Method: Bouwer-Rice

VISUAL ESTIMATION RESULTSEstimated Parameters

| <u>Parameter</u> | <u>Estimate</u> | |
|------------------|-----------------|--------|
| K | 0.004974 | cm/sec |
| y0 | 0.7502 | ft |

AUTOMATIC ESTIMATION RESULTSEstimated Parameters

| <u>Parameter</u> | <u>Estimate</u> | <u>Std. Error</u> | |
|------------------|-----------------|-------------------|--------|
| K | 0.009485 | 0.0007451 | cm/sec |
| y0 | 1.037 | 0.022 | ft |

Parameter Correlations

| | <u>K</u> | <u>y0</u> |
|----|----------|-----------|
| K | 1.00 | 0.68 |
| y0 | 0.68 | 1.00 |

Residual Statistics

for weighted residuals

Sum of Squares ... 3.667 ft²
 Variance..... 0.02048 ft²
 Std. Deviation..... 0.1431 ft
 Mean -0.05195 ft

No. of Residuals ... 181

No. of Estimates ... 2

APPENDIX G

**WESTON LETTER TO EPA
SUMMARY OF CARY STREET ACTIVITIES**



Roy F. Weston, Inc.
Suite 700
5599 San Felipe
Houston, Texas 77056-2721
713-621-1620 • Fax 713-621-6959

3 June 1998

Mr. Robert Wilkinson
U.S. Environmental Protection Agency
1445 Ross Avenue, Suite 1200 (MC: 6EN-HX)
Dallas, Texas 75202-2733

RE: Summary of Cary Street Activities
Analytical Sampling, Soil Removal, and Play Area Improvements
Houston, Texas

Dear Mr. Wilkinson:

Roy F. Weston, Inc. (WESTON®) has prepared this letter to summarize activities performed in the vicinity of Cary Street near downtown Houston, Texas on behalf of Lead Products Company, Inc. (Lead Products). These Cary Street-related activities were completed at the request of Mr. Robert Wilkinson of the U.S. Environmental Protection Agency (EPA). The purpose of these activities was to evaluate the extent of elevated lead concentrations in surface soils on properties located in the Cary Street area and remove soils in residential areas which were characterized by total lead concentrations greater than the EPA-established 400 milligrams per kilogram (mg/kg) action level. In general, the Cary Street activities included the following:

- Residential sampling on and around Cary Street conducted on 22 April 1997;
- Additional residential sampling in the neighborhood surrounding Cary Street and improvement of the Cary Street play area conducted on 20 May 1997;
- Pre-verification sampling conducted on 26 June 1997; and
- Soil removal and confirmation sampling activities conducted from 29 July through 1 August 1997.

These activities are discussed further in the following paragraphs.

INITIAL CARY STREET ACTIVITIES

As previously described in a letter from WESTON to Eva Fromm of Fulbright & Jaworski dated 1 May 1997 and titled "Summary of Residential Sampling Activities," WESTON performed the initial sampling visit in the Cary Street area on 22 April 1997. This sampling event was performed to evaluate the concentrations of lead in the surface soils on residential properties in the Cary Street area. This area is situated on either side of Cary Street to the east of Middle Street (see Figure 1).





Mr. Wilkinson
3 June 1998
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This sampling event included the following activities:

- Observing the area for the presence of battery casings.
- Collecting a total of 18 surface soil grab samples from a depth of 0 to 6 inches below ground surface (bgs) and six grab samples at depths ranging up to 2 feet bgs. All of these samples were submitted to Intertek Testing Services (ITS) for total lead analysis. The locations of these samples are shown on Figure 1.

In general, the shallow soil in the vicinity of Cary Street was comprised of silty clay soils which contained miscellaneous residential debris. There were no battery casing fragments observed during the sampling event.

The analytical results revealed lead concentrations ranging from 8.39 to 930 mg/kg (see Table 1). The locations with the highest concentrations were in the northeast portion of the sampling area. The lead concentrations were generally lower to the south and to the east along the boundary of the transmitter property.

The distribution of lead concentrations in these samples was not consistent with Lead Products being a source for the lead detected along Cary Street. A review of historical aerial photographs showed that a row of houses formerly existed in the open area where the play area is currently located. This information, combined with the distribution of the lead concentrations, suggests that lead-based paint is the most likely source of the lead present in the Cary Street soils.

Since background lead concentrations for this area had not been established and lead concentrations along Middle Street had not been evaluated, Mr. Wilkinson requested that additional sampling be performed at locations along Middle Street, both north and south of Cary Street.

ADDITIONAL CARY STREET ACTIVITIES

WESTON returned to the Cary Street area on 20 May 1997 to further evaluate the extent of lead in the surface soils on residential and industrial properties located in the vicinity of Cary Street by collecting additional samples and providing a cover over the bare soils in the Cary Street play area. In addition to WESTON personnel, Ms. Tina Garcia and Ms. Sonja Vodehnal of the City of Houston Lead Education Program and Mr. Wilkinson of EPA were present at some time during these activities.



Mr. Wilkinson

3 June 1998

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Additional Sampling Activities

This sampling event consisted of the following activities:

- Observing the area for the presence of battery casings.
- Collecting a grab sample (SS01) and a five-point composite sample (COMP01) from around the swing set in the Cary Street play area prior to covering. These samples were collected from a depth of 0 to 2 cm bgs.
- Collecting 18 surface soil grab samples from a depth of 0 to 2 cm bgs, including two duplicate samples (SS12 and SS18) that were collected for quality assurance purposes. These samples were collected from locations along North Nagle, Middle, Engelke, Ennis, and North Velasco Streets (see Figure 2).
- Completing hand auger borings at three surface soil sampling locations (SS08, SS09, and SS13) to a depth of approximately 2 feet bgs. Two soil grab samples were collected from each boring at depths of approximately 1 foot and 2 feet bgs.

WESTON received concurrence from Mr. Wilkinson for all sampling locations. All samples were collected using separate disposable scoops or auger equipment that was decontaminated between sampling locations and intervals. All the samples were placed in clean, laboratory-supplied, 4-ounce jars, which were labeled, packed, placed in coolers with ice, and shipped to ITS for total lead analysis.

In general, the shallow soil in the vicinity was comprised of silty clay soils which contained miscellaneous residential debris. There were no battery casing fragments observed during the sampling event.

The analytical results for the samples are summarized on Table 2. Total lead concentrations from the composite and grab sample collected in the Cary Street play area were 1,240 mg/kg and 3,390 mg/kg, respectively. Total lead concentrations in surface soil samples (depth less than 2 cm bgs) collected from the surrounding area ranged from 10.8 to 2,230 mg/kg.

Surface soil total lead concentrations exceeding the 400 mg/kg action level were only encountered at two locations (SS17 and SS19) which were adjacent to industrial properties located along North Velasco Street. The Insuldyne Corporation (Insuldyne) property along the southwest side of North Velasco Street is apparently utilized for the storage of scrap metal and debris. As such, the elevated total lead concentration at location SS17 is not likely associated with Cary Street or the Lead Products facility. Since a limited amount of bare soil was present between the road surface and industrial facilities along North Velasco Street, sample SS19 was collected within 3 feet of



Mr. Wilkinson
3 June 1998
Page 4

both the road and the adjacent industrial facility. Therefore, elevated lead concentrations at this location may be associated with the adjacent industrial activities or vehicular traffic.

Play Area Covering Activities

In addition to the 20 May 1997 sampling activities, improvements were made to the Cary Street play area. The purpose of these improvements was to provide a cover over the bare soils adjacent to the swing set in the Cary Street play area. Specifically, the improvements included the following:

- Placement of Mirafi 600X woven geotextile material (permeable liner) over bare soils in the playground area.
- Placement of a landscape timber border around the playground area.
- Placement of 4 to 5 inches of pea gravel over the geotextile material.
- Construction of two playground benches adjacent to the playground area.

Placement of the play area cover was completed by Eagle Construction and Environmental, Inc. (Eagle) with oversight by both WESTON and EPA representatives.

CARY STREET REMEDIATION ACTIVITIES

Pre-Verification Sampling Activities

Prior to remediation activities and based on the WESTON Scope of Work dated 26 June 1997, WESTON conducted pre-verification sampling in the unimproved areas (i.e., dirt) used for driving surfaces in the Cary Street area to further delineate the extent and the approximate depth of lead-affected soils, since these areas had not been previously characterized. These driving surfaces are situated adjacent to the play area and include Cary Street. Pre-verification samples, representing an area less than 1,500 square feet, were collected on 26 June 1997 at five locations (see Figure 3). Grab samples were collected from each location at 2-inch intervals in the upper 6 inches and 3-inch intervals from 6 to 12 inches bgs. All samples were collected using separate disposable scoops or auger equipment that was decontaminated between sampling locations and intervals. The samples were placed in clean, laboratory-supplied, 4-ounce jars, which were labeled, packed, placed in coolers with ice, and shipped to ITS for total lead analysis. The upper two samples at each location were initially analyzed with all other samples being placed on hold and not being analyzed.

Analytical results from pre-verification samples are presented in Table 3. Based on the analytical results, the only driving surface consisting of soils exceeding the action level, and thus requiring



Mr. Wilkinson
3 June 1998
Page 5

removal, is the unimproved area currently being utilized as a driving surface by the residents, located north of Cary Street. This area was characterized by samples PV04 and PV05.

Cary Street Remediation Activities

As outlined in WESTON's scope of work date 26 June 1997, excavation of soils with lead concentrations exceeding the EPA action level of 400 mg/kg was required in the Cary Street neighborhood. Excavation, verification sampling, and backfill activities were conducted from 29 July 1997 through 1 August 1997. Excavation and backfill activities were performed by Eagle with oversight and verification sampling conducted by WESTON personnel. Verification samples were placed in clean, laboratory-supplied, 4-ounce jars, which were labeled, packed, placed in coolers with ice, and shipped to Xenco Laboratories, Inc. for total lead analysis.

Based on residential and pre-verification sampling results, the upper 4 inches of soil was excavated from the five areas illustrated on Figure 4. Following the initial excavation of the upper 4 inches of soil, five-point composite verification samples were collected at a frequency of approximately one composite sample per 1,500 square feet area based on the configuration of the impacted area. If analytical results indicated concentrations exceeding the 400 mg/kg total lead action level, an additional 4 inches of soil was removed from the corresponding area and an additional verification sample was collected. Verification sample locations and the approximate division of each 1,500 square foot area are illustrated on Figure 4 and analytical results are presented in Table 4.

As indicated in Table 4, all samples collected after the initial 4-inch excavation had total lead concentrations below the 400 mg/kg action level, except for sample EX02-970729-4 (552 mg/kg). Consequently, an additional 4 inches of soil was excavated from this area and WESTON collected a second composite verification sample at a depth of 8 inches bgs. Analytical results from the verification sample EX02-970731-08, collected after removal of approximately 8 inches of soil, showed a total lead concentration of 6.73 mg/kg. All other verification samples confirmed that total lead concentrations in the sampled areas were below the 400 mg/kg action level. Each area was backfilled following verification that total lead concentrations were below the action level. Excavated soils were properly manifested and transported to Atascocita Recycling & Disposal Facility by Pulido Trucking, Inc. Selected photographs taken during soil removal activities are provided following the tables and figures.

Based on verification samples demonstrating total lead concentrations below the action level, excavated areas were backfilled with crushed limestone in driving areas and fill dirt in non-driving areas and adjacent to residential housing.



Mr. Wilkinson

3 June 1998

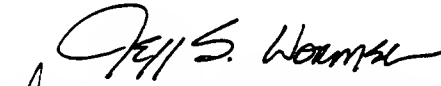
Page 6

Following soil removal activities, WESTON contacted the City of Houston to request them to proceed with Cary Street paving activities. After numerous conversations with City of Houston personnel (throughout the fall of 1997 and early 1998) where WESTON was informed that Cary Street paving activities were imminent, major sewer improvements were initiated by the City of Houston in the Cary Street area. Subsequently, it appears that paving activities will not be completed by the City of Houston until these City improvements are completed in the area. Consequently, WESTON, on behalf of Lead Products, is submitting this letter which completes Lead Products' involvement in the Cary Street area.

Please free to contact me at (713) 621-1620 if you have any questions regarding the sampling results.

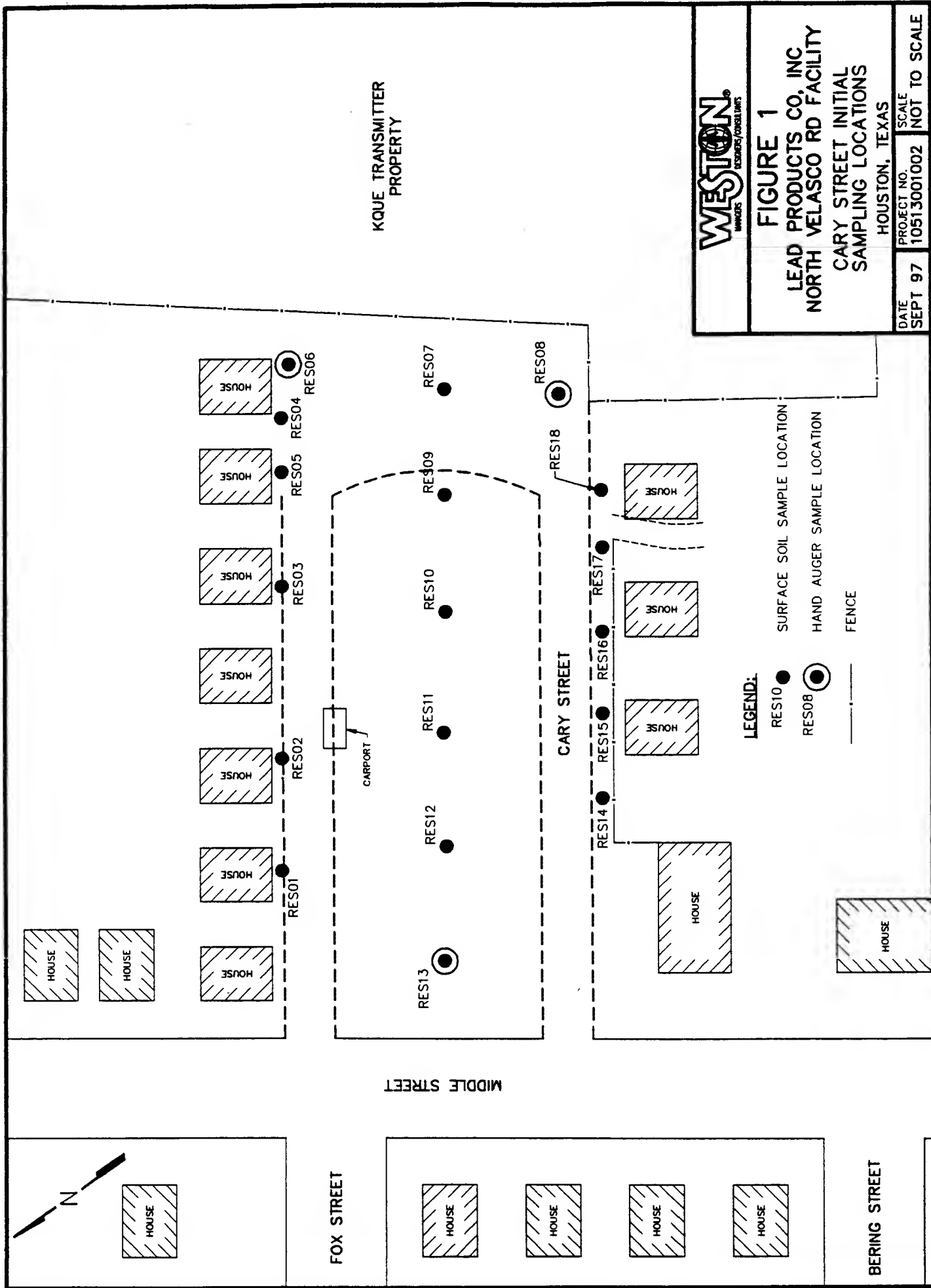
Very truly yours,

ROY F. WESTON, INC.


for David W. Anderson, P.E., P.G.
Project Manager

JSW/DWA
Attachments

cc: Mr. Carter Simonds—Lead Products
Ms. Eva Fromm—Fulbright & Jaworski
Ms. Susan Litherland—WESTON
Mr. Jeff Wormser—WESTON



KQUE TRANSMITTER
PROPERTY



FIGURE 1

LEAD PRODUCTS CO. INC

NORTH VELASCO RD FACILITY

CARY STREET INITIAL SAMPLING LOCATIONS

HOUSTON, TEXAS

| | | |
|---------|-------------|--------------|
| DATE | PROJECT NO. | SCALE |
| SEPT 97 | 10513001002 | NOT TO SCALE |

- LEGEND:**
- RES10 ● SURFACE SOIL SAMPLE LOCATION
 - RES08 ○ HAND AUGER SAMPLE LOCATION
 - FENCE

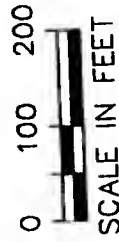
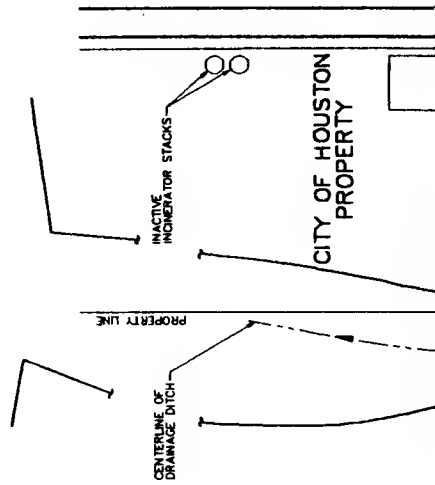
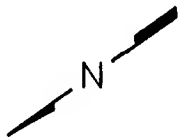
TABLE 1
ANALYTICAL RESULTS
INITIAL CARY STREET SAMPLING
(22 APRIL 1997)

| SAMPLE | | | TOTAL LEAD | TCLP LEAD |
|-----------------------|-----------|------|------------|-----------------|
| I.D. | DEPTH | TYPE | (mg/kg) | (mg/kg) |
| RES01-00 | 0-6 in. | Grab | 930 | < 0.200 |
| RES02-00 | 0-6 in. | Grab | 676 | NA ² |
| RES03-00 | 0-6 in. | Grab | 572 | NA |
| RES04-00 | 0-6 in. | Grab | 601 | NA |
| RES05-00 | 0-6 in. | Grab | 271 | NA |
| RES06-00 | 0-6 in. | Grab | 115 | NA |
| RES06-01 | 6-12 in. | Grab | 123 | NA |
| RES06-02 | 12-18 in. | Grab | 623 | NA |
| RES07-00 | 0-6 in. | Grab | 379 | NA |
| RES08-00 | 0-6 in. | Grab | 242 | NA |
| RES08-01 | 6-12 in. | Grab | 217 | NA |
| RES08-02 | 12-18 in. | Grab | 922 | NA |
| RES09-00 | 0-6 in. | Grab | 384 | NA |
| RES10-00 | 0-6 in. | Grab | 413 | NA |
| RES11-00 | 0-6 in. | Grab | 213 | NA |
| RES12-00 | 0-6 in. | Grab | 529 | NA |
| RES13-00 ¹ | 0-6 in. | Grab | 427 | NA |
| RES13-01 ¹ | 6-12 in. | Grab | 51.7 | NA |
| RES13-02 ¹ | 18-24 in. | Grab | 8.39 | NA |
| RES14-00 | 0-6 in. | Grab | 195 | NA |
| RES15-00 | 0-6 in. | Grab | 245 | NA |
| RES15-00 | 0-6 in. | Grab | 156 | NA |
| RES17-00 | 0-6 in. | Grab | 529 | NA |
| RES18-00 | 0-6 in. | Grab | 407 | NA |

NOTES:

¹ Sample location RES13 was located adjacent to the swing set in the vacant area situated adjacent to Cary Street.

² NA - Not Analyzed



WESTON
DESIGNERS/CONSULTANTS

FIGURE 2

LEAD PRODUCTS CO, INC
NORTH VELASCO RD FACILITY
ADDITIONAL CARY STREET
SAMPLING LOCATIONS

HOUSTON, TEXAS

| | | |
|-----------------|----------------------------|--------------------|
| DATE SEPT 97 | PROJECT NO. 10513001002 | SCALE 1" = 200' |
|-----------------|----------------------------|--------------------|

LEGEND:

- ABANDONED RR SPUR
- SITE BOUNDARY
- DITCH CENTERLINE WITH FLOW DIRECTION
- HOUSE
- SURFACE SOIL SAMPLE LOCATION
- HAND AUGER SAMPLE LOCATION

TABLE 2
ANALYTICAL RESULTS
ADDITIONAL CARY STREET SAMPLING
(20 MAY 1997)

| I.D. | DEPTH | TYPE | TOTAL LEAD (mg/kg) |
|-------------------|---------|-------|--------------------------|
| COMP01 | 0-2 cm. | Comp. | 1,240 |
| SS01 | 0-2 cm. | Grab | 3,390 |
| SS02 | 0-2 cm. | Grab | 116 |
| SS03 | 0-2 cm. | Grab | 122 |
| SS04 | 0-2 cm. | Grab | 109 |
| SS05 | 0-2 cm. | Grab | 98 |
| SS06 | 0-2 cm. | Grab | 32 |
| SS07 | 0-2 cm. | Grab | 15.8 |
| SS07 | 0-2 cm. | Grab | 73.8 |
| SS08-01 | 1 ft. | Grab | 57.1 |
| SS08-02 | 2 ft. | Grab | 13 |
| SS07 | 0-2 cm. | Grab | 175 |
| SS09-01 | 1 ft. | Grab | 5.49 |
| SS09-02 | 2 ft. | Grab | 14.2 |
| SS10 | 0-2 cm. | Grab | 132 |
| SS11 | 0-2 cm. | Grab | 76.1 |
| SS18 ² | 0-2 cm. | Grab | 128 |
| SS13 | 0-2 cm. | Grab | 136 |
| SS13-01 | 1 ft. | Grab | 25.9 |
| SS13-01.5 | 1.5 ft. | Grab | 47 |
| SS10 | 0-2 cm. | Grab | 242 |
| SS10 | 0-2 cm. | Grab | 10.8 |
| SS16 | 0-2 cm. | Grab | 156 |
| SS07 | 0-2 cm. | Grab | 2,180 |
| SS18 ² | 0-2 cm. | Grab | 2,230 |
| SS19 | 0-2 cm. | Grab | 901 |

NOTES:

¹ Sample SS12 is a duplicate of sample SS11.

² Sample SS18 is a duplicate of sample SS17.



FIGURE 3

**LEAD PRODUCTS CO, INC
NORTH VELASCO RD FACILITY**

**PRE-EXCAVATION SAMPLING
CARY STREET
HOUSTON, TEXAS**

| DATE | PROJECT NO. | SCALE |
|---------|-------------|--------------|
| SEPT 97 | 10513001002 | NOT TO SCALE |

H:\LEADPROD\LP0118.BF 09-16-97 1=50 (1196STD.PCP)

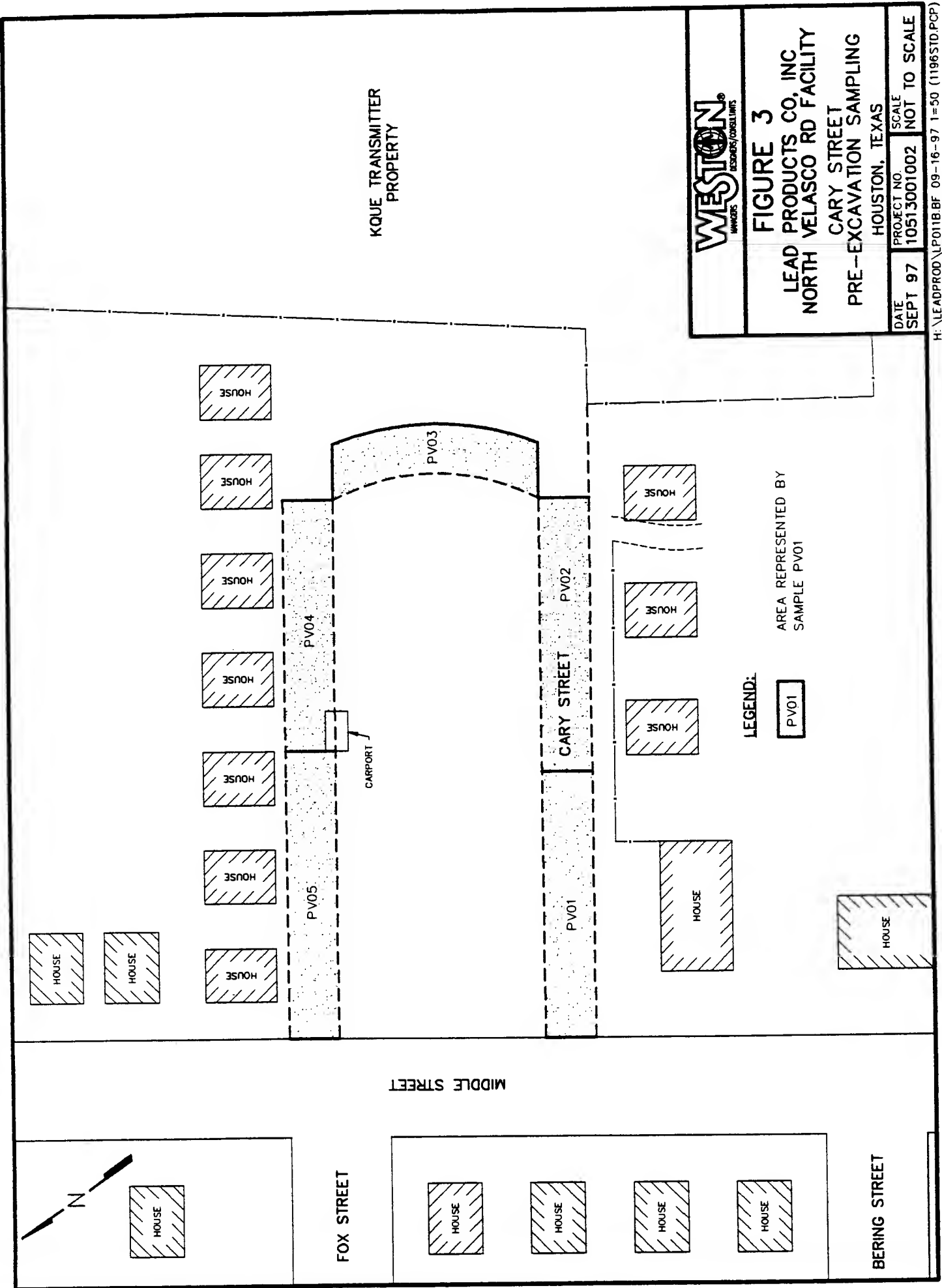


TABLE 3
ANALYTICAL RESULTS
CARY STREET PRE-VERIFICATION SAMPLING
(26 JUNE 1997)

| SAMPLE | | | TOTAL LEAD (mg/kg) |
|---------------|----------------|------|--------------------------|
| I.D. | DEPTH (in.) | TYPE | |
| PV01-970626-2 | 2 | Grab | 101 |
| PV01-970626-4 | 4 | Grab | 244 |
| PV02-970626-2 | 2 | Grab | 209 |
| PV02-970626-4 | 4 | Grab | 193 |
| PV03-970626-2 | 2 | Grab | 354 |
| PV03-970626-4 | 4 | Grab | 301 |
| PV04-970626-2 | 2 | Grab | 565 |
| PV04-970626-4 | 4 | Grab | 385 |
| PV05-970626-2 | 2 | Grab | 549 |
| PV05-970626-4 | 4 | Grab | 685 |

TABLE 4
ANALYTICAL RESULTS
CARY STREET VERIFICATION SAMPLING
(29 JULY - 1 AUGUST 1997)

| I.D. | SAMPLE | | | TOTAL LEAD (mg/kg) |
|---------------|---------|----------------|-------|--------------------------|
| | DATE | DEPTH (in.) | TYPE | |
| EX01-970729-4 | 7/29/97 | 4 | Comp. | 315 |
| EX02-970729-4 | 7/29/97 | 4 | Comp. | 552 |
| EX02-970729-8 | 7/31/97 | 4 | Comp. | 6.73 |
| EX03-970729-4 | 7/29/97 | 4 | Comp. | 170 |
| EX04-970729-4 | 7/29/97 | 4 | Comp. | 249 |
| EX05-970729-4 | 7/30/97 | 4 | Comp. | 252 |
| EX06-970729-4 | 7/30/97 | 4 | Comp. | 110 |
| EX07-970729-4 | 7/30/97 | 4 | Comp. | 285 |

PHOTOGRAPHS

Photograph No. 1



The photograph was taken facing east and illustrates Excavation Area No. 4 (EX04) after soil removal activities. The location of this area is shown on Figure 4.

Photograph No. 2



The photograph was taken facing west and illustrates Excavation Area No. 4 (EX04) after soil removal activities. The location of this area is shown on Figure 4.

Photograph No. 3



The photograph was taken facing west and illustrates Excavation Area No. 7 (EX07) after soil removal activities. The location of this area is shown on Figure 4.

Photograph No. 4



The photograph was taken facing west and illustrates Excavation Area Nos. 1 and 2 (EX01 and EX02) after soil removal activities. The locations of these areas are shown on Figure 4.

Photograph No. 5



The photograph was taken facing west and illustrates Excavation Area No. 5 (EX05) after soil removal activities. The location of this area is shown on Figure 4.

Photograph No. 6



The photograph was taken facing west and illustrates visqueen that was placed in the excavation areas while analytical results were pending and to prevent stormwater contacting exposed soils.

Photograph No. 7



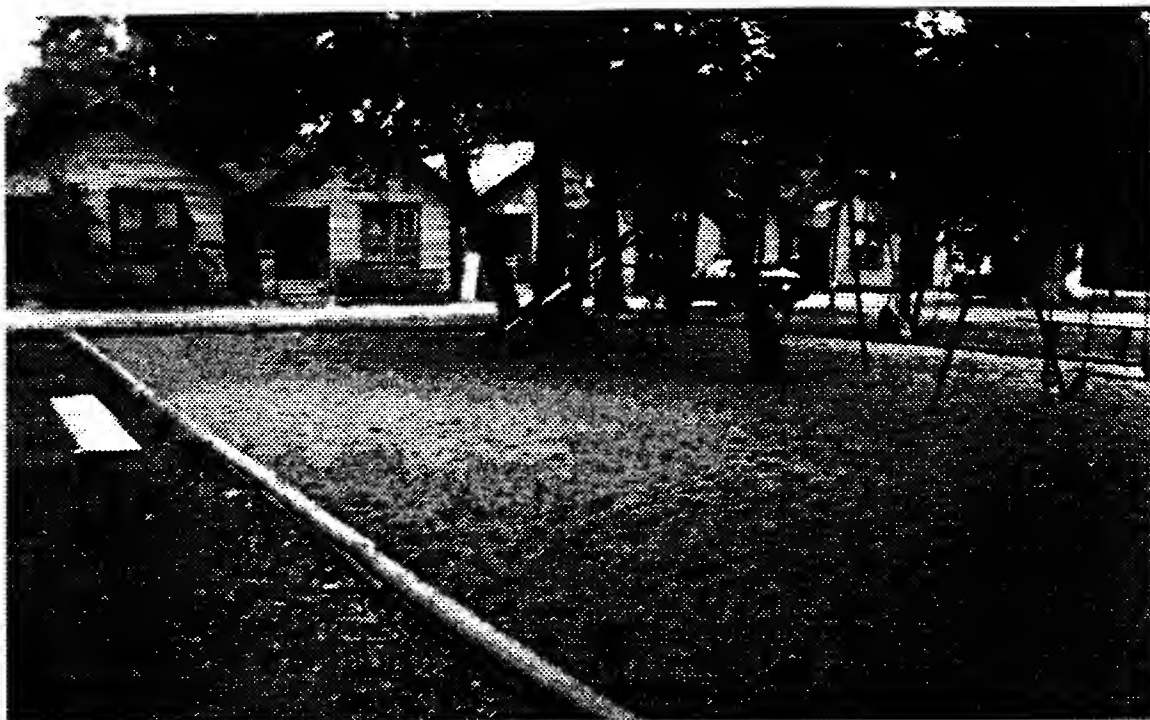
The photograph was taken facing east and illustrates the excavated soils stockpile that was placed on and covered with visqueen prior to disposal.

Photograph No. 8



The photograph was taken facing east and illustrates the unimproved driving area that has been backfilled with caliche following soil removal and receipt of analytical verification results.

Photograph No. 9



The photograph was taken facing northeast and illustrates the Cary Street Play Area.

APPENDIX H

WETLAND DELINEATION STUDY REPORT

**REPORT OF A WETLAND DELINEATION STUDY
APPROXIMATELY 600 LINEAR FOOT DRAINAGE DITCH
LEAD PRODUCTS COMPANY, INC.
709 NORTH VELASCO STREET
CITY OF HOUSTON, HARRIS COUNTY, TEXAS**

**PREPARED FOR
ROY F. WESTON, INC.
5599 SAN FELIPE
HOUSTON, TEXAS 77056**

**Houston-Harris County Atlas
KEY MAP NO. 494-N**

**submitted by Oakes Environmental Compliance Consultants
4011 Joyce Boulevard
Houston, Texas 77084
(281) 463-0845**

JULY 1998

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EXHIBITS

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|--|--------------|
| <u>Title</u> | <u>Plate</u> |
| Metro Houston Site Location Map | 1 |
| Current FEMA Floodplain Map | 2 |
| U.S.G.S. Topographic Map | 3 |
| National Wetland Inventory Map | 4 |
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1.0 EXECUTIVE SUMMARY

Oakes Environmental Compliance Consultants (OECC) was contracted by Roy F. Weston, Inc. (WESTON) to conduct a Wetland Delineation Study on an approximately six hundred (600) linear foot drainage ditch within the property belonging to the Lead Products Company, Inc., located at 709 North Velasco Street, in the City of Houston, Harris County, Texas. The purpose of our study, conducted in July 1998, was to ascertain the approximate location and size of any jurisdictional wetlands which might exist within this drainage ditch area.

Our field investigation was conducted during a period of prolonged drought and unusually high temperatures for the season. Therefore, our field crew investigated the study site for scientific evidence of jurisdictional wetlands based on criteria which might indicate long-standing conditions of wetland hydrology rather than current saturation. The available information for this project and the on-site reconnaissance is summarized below:

- * The natural soil profile is disturbed on the study site as the result of many years of urban development, including excavation of the subject drainage ditch. Urban Land Complex soil (Ur) is the soil type found within the study site. This area of Urban Land Complex soil is surrounded by soils defined as Lake Charles-Urban Complex soil. As delineated by the U.S.D.A. Natural Resources Conservation Service (NRCS), both Urban Land Complex and Lake Charles-Urban Complex soil are classified as non-hydric (non-wetland) soils.
- * The natural hydrology of the study site has been extensively altered as the result of industrial development, including concrete parking lot and pad construction and roadway and railroad embankment construction. The subject drainage ditch headwaters to the west of and directly behind the Lead Products Inc. facility and outfalls into Buffalo Bayou about 1,200 linear feet north of the headwaters. The site itself is not within the current 100-year floodplain. The banks of the drainage ditch are steep and the bottom of the ditch is narrow (10-15 linear feet in width) and flat. Significant erosion indicates that when rainfall events do occur, the volume and velocity of runoff in this drainage ditch is high. Thus, the drainage ditch may contain a large volume of water over a short period of time, but the ditch empties quickly into Buffalo Bayou and does not retain water.
- * Whether the vegetation is wetland or upland species is determined by available hydrology. Vegetation found within the study site is primarily native species common to the area. Hackberry and Chinaberry trees and saplings, wild grape vine, Poison Ivy and Horseweed were dominant species within the study site. The U.S.G.S. Topographic Map of the area shows that the study site has been heavily developed as an industrial area since at least the 1940's. The National Wetland Inventory Map labels the subject drainage ditch as "RT_r," meaning an "artificial, semipermanent, tidally influenced" body of water. In summary, due to scour created by the high volume and velocity of water during periods of runoff, the bottom of the ditch contains very little vegetation of any kind.

In conclusion, in our professional opinion, the approximately 600 linear foot portion of the drainage ditch that was our area of study contains no jurisdictional wetlands.

Our professional recommendation is that any improvement projects, including storm sewer installation in the study portion of this drainage ditch, will not require permit application from the U.S. Army Corps of Engineers (USACE), Galveston District, prior to commencing construction.

2.0 INTRODUCTION

2.1 Project Objective

This report describes the methodology employed and results obtained from the Wetland Delineation Study performed by Oakes Environmental Compliance Consultants (OECC), under contract to Roy F. Weston, Inc. (WESTON), on an approximately six hundred (600) linear foot drainage ditch within the property belonging to the Lead Products Company, Inc., located at 709 North Velasco Street in the City of Houston, Harris County, Texas. The study site is located in an area which has been heavily developed for industrial usage since at least 1940. Our study was performed during the week of July 20-24, 1998 to determine the existence of jurisdictional wetlands according to federal regulations that were in effect on that date. No recent mechanical disturbance has occurred within the study area. The purpose of our study was to locate any areas of jurisdictional wetland within the subject drainage ditch.

2.2 Project Scope

The following tasks were performed:

1. Government records, reports and maps were reviewed for information regarding soils, topography, hydrology and wetland species.
2. Physical site reconnaissances were conducted to test soils, identify wetland species of vegetation and study site hydrology.
3. The boundaries of jurisdictional wetlands were then mapped and flagged in the field.
4. This report was prepared summarizing our findings, conclusions and recommendations.

2.3 Basis of Report

We reserve the right to alter our conclusions and recommendations based on our review of any information obtained after the date of this report. Our professional services have been performed using that degree of care and skill ordinarily exercised, under similar conditions, by geotechnical and environmental consultants practicing in this or similar localities. No other warranty, expressed or implied, is made as to the professional information contained in this report.

3.0 BACKGROUND INFORMATION

3.1 Planned Construction Description

It is our understanding that the subject drainage ditch may be improved by the installation of a storm sewer.

3.2 Existing Conditions

The study site is located immediately east of U.S. 59, the Eastex Freeway, between I-10 East to the north and U.S. 45, the Gulf Freeway, to the south. The Lead Products, Inc. plant is located on the west side of North Velasco Street, north of Engelke Street. Engelke Street runs eastward into Navigation Boulevard, the nearest main thoroughfare. The subject drainage ditch rises at the west boundary of the Lead Products, Inc. plant site and trends northward towards Buffalo Bayou, approximately 1,200 linear feet north of the headwaters of the subject ditch. The general site location is shown on Plate 1, Metro Houston Site Location Map. See also Page 494-N of the Houston and Harris County Atlas, produced by Key Maps, Inc.

4.0 INVESTIGATIVE METHODOLOGY

This wetland determination was performed according to the "Routine Method for Areas Less Than 5 Acres in Size", Corps of Engineers Wetland Delineation Manual (Technical Report Y-87-1). Aerial photographs, the U.S.G.S. Topographic Map and the National Wetlands Inventory Map of the study area were reviewed. A Baseline, Transects and Observation Points were set in the field. The western bank of the subject drainage ditch was established as the Baseline. Transects were established perpendicular to the Baseline on either side of the ditch, and Observation Points were established on each Transect on the east and west sides of the ditch at representative elevations where changes were noted in the vegetative community.

4.1 Aerial Photography Review

A 1972 aerial photograph used as the base for the NRCS Soil Survey map shows the study area to be almost entirely developed.

4.2 FEMA Floodplain Map Review

The current (September 28, 1990) Federal Emergency Management Agency FIRM Floodplain Map for the area was reviewed to determine the extent of the floodway and floodplain on the site. The FEMA floodplain map for the study area shows the site to be outside of the current 100-year floodplain (Zone X - area of minimal flooding) at an elevation of about 25 feet MSL. (See Plate 2 - The FEMA Map.)

4.3 Current U.S.G.S. Topographic Map - 1982

The study site is shown as heavily developed. The elevation of North Velasco Street is at approximately 36 feet above mean sea level (MSL), as shown on the 1982 United States Geological Settegast Quadrangle, Texas topographic map. The subject drainage ditch is shown to the west of North Velasco Street between Engelke Street and Buffalo Bayou. (See Plate 3 -The U.S.G.S. Topographic Map.)

4.4 National Wetland Inventory Map - 1979

The study area is shown on the National Wetland Inventory Map for the Settegast, Texas Quadrangle, which defines the subject drainage ditch as "RTr," meaning an "artificial, semipermanent, tidally influenced" body of water. Thus, historical evidence shows that the subject ditch was man-created out of uplands. The surrounding area is indicated to be "urban upland." (See Plate 4 - The National Wetlands Inventory Map.)

5.0 ASSESSMENT RESULTS

5.1 Vegetation

Vegetation observed and determined to be wetland species were those indicator species promulgated by the U.S. Department of the Interior, Fish and Wildlife Service National List of Plant Species That Occur in Wetlands: South Plains (Region 6), Biological Report 88. Indicator Categories range from Obligate Wetland (OBL) given an Index of 1; Facultative Wetland (FACW) Index 2; Facultative (FAC) Index 3; Facultative Upland (FACU) Index 4; and Obligate Upland (UPL) Index 5.

Vegetation within the 600-linear foot drainage ditch is primarily native species common to disturbed sites within Harris County, Texas. Upland species are dominant throughout the study area. Very little wetland vegetation was observed, even within the bottom width of the subject drainage ditch.

The drainage ditch and surrounding area was dominated by such species as Hackberry and Chinaberry trees and saplings, Poison Ivy, Trumpet Creeper, Viburnum, wild grape vines, Horse Weed and Johnson Grass. The vegetation along the banks of the ditch is so thick that it has shaded out most species at the bottom of the ditch. This shade, combined with severe scour due to high volumes and velocities of runoff during rainfall events, contributes to the lack of vegetation at the bottom of the drainage ditch.

5.2 Soils

The U.S. Department of Agriculture Natural Resource Conservation Service (formerly the Soil Conservation Service or SCS) Soil Survey Maps of Harris County (1976) and the Harris County Hydric Soils List (July 1991), were used as preliminary tools to identify general soil types which are located in the area of the subject property. (See Plate 5 - The S.C.S Soils Map.)

One soil type, Urban Land Complex soil (UR) is found within the approximately 600-linear foot study site. Urban Land Complex soils are classified as non-hydric (non-wetland) soils. This area of Urban Land Complex soil is surrounded by soils defined as Lake Charles-Urban Complex soil, which is also a non-wetland soil.

The natural soil profile is disturbed as the result of prior dredging and industrial development. Ocular observation and subsurface testing, including chemical tests, indicated that the soil type actually encountered on the approximately 600-linear foot study site most nearly matches the soil type described in the SCS Soil Survey for Lake Charles-Urban soil.

5.3 Hydrology

As defined by the Field Guide for Wetland Delineation, 1987 Corps of Engineers Manual.

"Areas with evident characteristics of wetland hydrology are those where the presence of water has an overriding influence on ... vegetation and soils... Such characteristics are usually present in areas that are inundated or... saturated to the surface for sufficient duration to develop hydric soils and support (hydrophytic) vegetation.... Numerous factors (e.g., precipitation, stratigraphy, topography, soil permeability, and plant cover) influence the wetness of an area." And, "Indications of wetland hydrology may include, but are not necessarily limited to, drainage patterns, drift lines, sediment deposition, water marks (on trees),... buttressed roots...."

Topography in this area of Harris County is extremely flat, with average slopes of less than six (6) feet per mile. Historical evidence from topographic maps shows that the present location and headwaters of the subject drainage ditch was excavated out of upland soil to outfall into an approximately 100-linear foot long natural sidestream which was located on the south bank of Buffalo Bayou.

The present drainage ditch collects surface runoff from the Lead Products, Inc. plant site and channels it northward into Buffalo Bayou, a distance of approximately 1,200 linear feet. This ditch also collects surface runoff from parking lots and industrial pads on both sides of the channel north of Engelke Street.

The elevation on the high bank of the subject drainage ditch near its headwaters is about thirty-six (36) feet above mean sea level (MSL). The elevation of the outfall point into Buffalo Bayou is at about twenty-six (26) feet MSL, which creates an elevation differential of approximately ten (10) feet from the headwaters to the outfall on the south bank of Buffalo Bayou. Thus, the drainage ditch has a slope of about ten (10) feet over an approximately one thousand-two hundred (1,200) length, which would be equal to a slope of about forty-four (44) feet per mile. A channel with a side-slope this steep will carry a large volume of runoff at a rapid rate. Thus, a large volume of water may collect in the drainage ditch during rainfall events, but the water will be quickly carried into the adjacent bayou and will not pond within the ditch.

5.4 Locations of Jurisdictional Wetlands

The legal criteria for a jurisdictional wetland are the presence of hydric (wetland) soils, hydric vegetation, and wetland hydrology (inundated or saturated soil for twenty-one (21) or more consecutive days out of the growing season). The soils on the study site are not hydric soils, the plant profile is dominated by upland species, and there is no evidence of wetland hydrology. Historical evidence also shows that this drainage ditch was man-created out of uplands more than fifty (50) years ago. Thus, in our professional opinion, there are no jurisdictional wetlands within the subject drainage ditch study site and the ditch does not fall under U.S. Army Corps of Engineers (USACE) jurisdiction. (See Plate 6 - The Baseline, Transects and Observation Points Map.)

6.0 CONCLUSIONS, EVALUATION, RECOMMENDATIONS

6.1 Conclusions

In conclusion, in our professional opinion, the approximately 600 linear foot portion of the drainage ditch that was our area of study contains no jurisdictional wetlands.

6.2 Impact on Planned Construction

Erosion control methods should be implemented by the contractor and access sites to the construction area should be designed to avoid impacts such as accidental discharge of surfacing material into Buffalo Bayou.

6.3 Regulatory Criteria

If it is found to be necessary to extend the proposed improvement project outside of the subject study area, unrecorded jurisdictional wetlands may be encountered along the banks of Buffalo Bayou and no disturbance of those bankside areas should occur until a wetland delineation has been conducted in that area.

6.4 Recommendations

Our professional recommendation is that any improvement projects, including storm sewer installation within the study portion of the subject drainage ditch, will not require permit application from the USACE, Galveston District, prior to commencing construction.

7.0 PERSONNEL

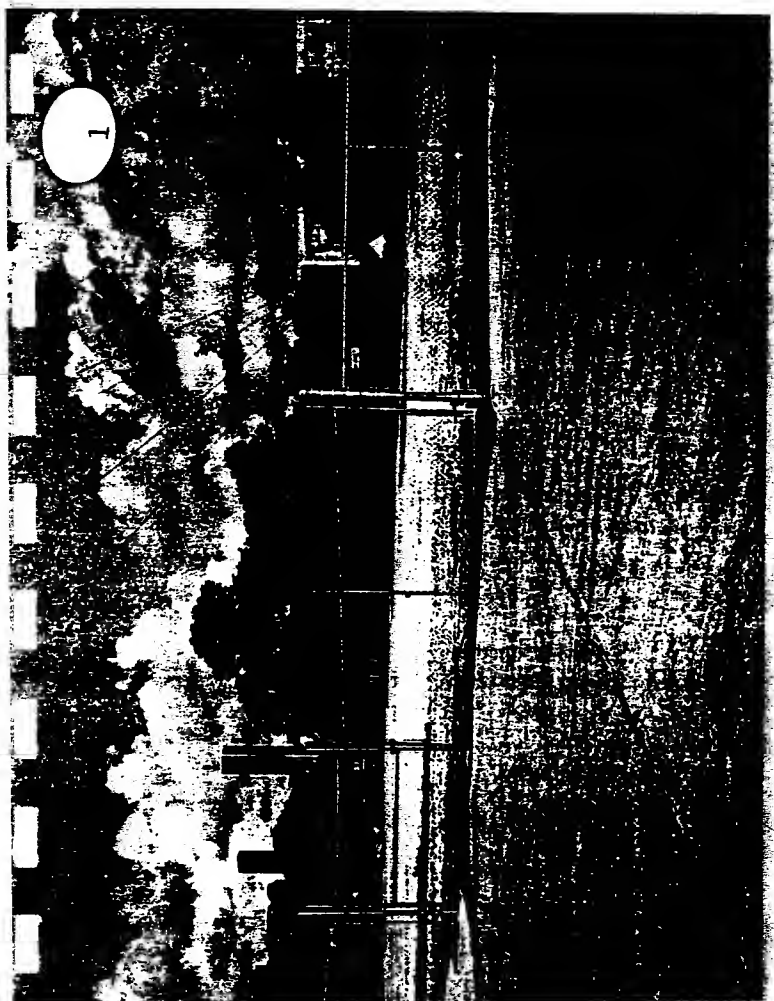
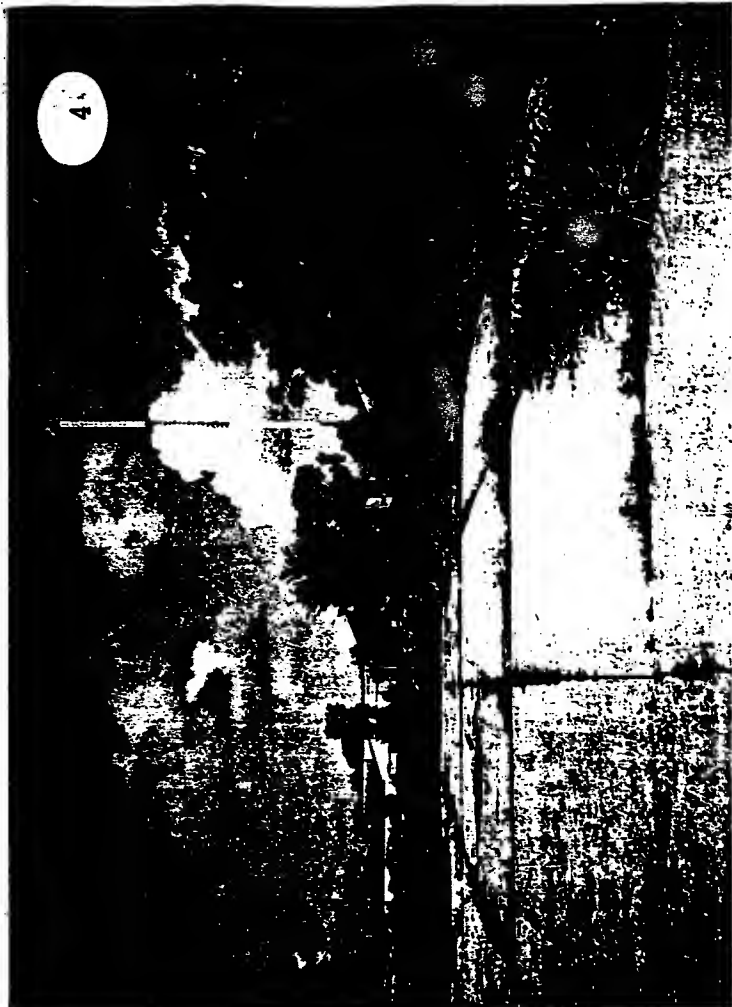
OECC personnel who assisted in this study were under the direction of Elizabeth Oakes, Senior Biologist and Wetland Delineator, B.S. (1968), Rice University, Graduate Studies Environmental Sciences, University of Houston (1972-74). Ms. Oakes has been involved in wetland studies since 1978 and is the president and owner of Oakes Environmental Compliance Consultants (OECC).

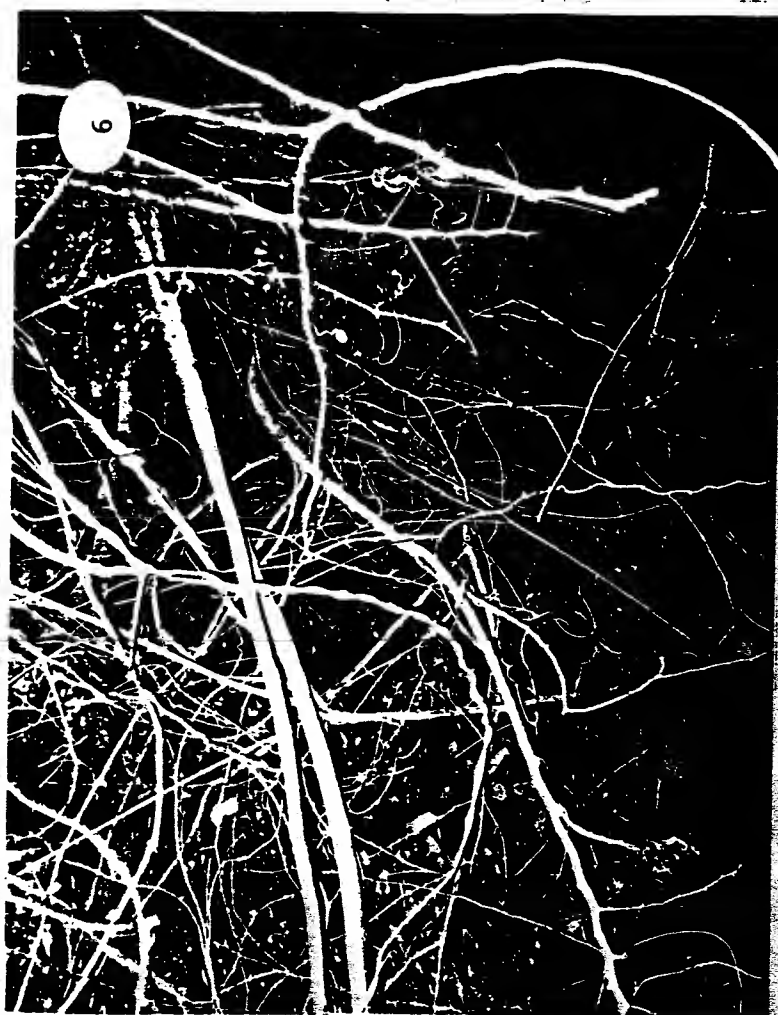
8.0 REFERENCES

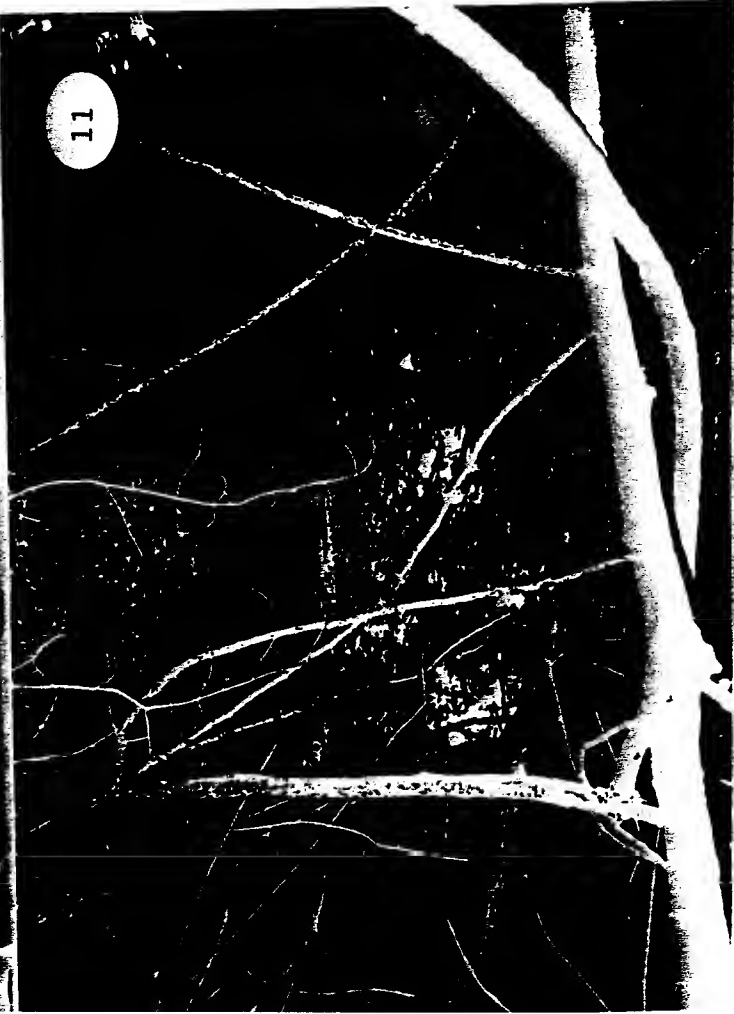
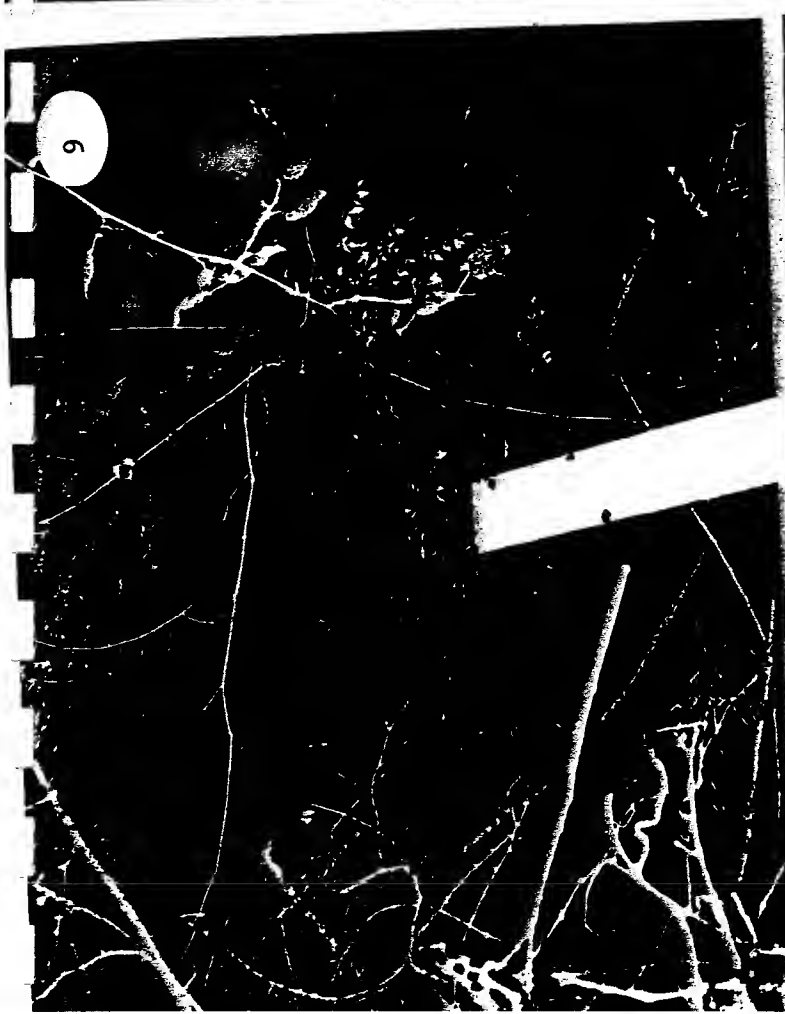
- 1) Aerial Photograph 1972 - NRCS Soil Survey of Harris County.
- 2) Federal Emergency Management Agency FIRM Floodplain Map, Panel 375, City of Seabrook, Harris County, Texas, September 28, 1990.
- 3) Hydric Soils in Harris County, Texas, U.S.D.A. Soil Conservation Service, July 31, 1991.
- 4) Harris County SCS Soil Survey, U.S.D.A. Soil Conservation Service, August 1976, Panel 93.
- 5) National List of Plant Species that Occur in Wetlands: South Plains (Region 6), Biological Report 88 (26.6), U.S. Department of the Interior, Fish & Wildlife Service, May 1988.
- 6) National Wetland Inventory Map - Settegast, Texas, U.S. Department of the Interior, Fish & Wildlife Service, 1979.
- 7) U.S.G.S. Topographic Map, Settegast, Texas Quadrangle, 1982.
- 8) Wetland Delineation Manual, U.S. Army Corps of Engineers (Technical Report Y-87-1.

APPENDIX A PHOTOGRAPHIC LOG

- 1) The subject drainage ditch headwaters behind the chain-link fence shown in this photograph, which was taken looking west from the Lead Products Company, Inc. parking lot located on the west side of North Velasco Street. Runoff from the industrial pad and surrounding parking lots as well as maintenance-mowed lawn areas collects in the ditch and outfalls into Buffalo Bayou to the north.
- 2) This photograph, taken on the Lead Products Company, Inc. plant site, looks west towards the drainage ditch, which is behind the shed shown in the background. This grassed area also drains into the subject ditch.
- 3) This photograph, taken looking south along the east side of the ditch, shows the grassed areas that cover most of the land between Buffalo Bayou and the Lead Products Company, Inc. plant site.
- 4) This photograph, which was shot looking south, shows the abandoned concrete pad located due north of the Lead Products Company, Inc. plant site which drains into the subject ditch to the right in this photograph.
- 5) On the west side of the ditch, storm water from several industrial sites located between Engelke Street and Buffalo Bayou also drains into the subject ditch.
- 6) This photograph, taken from the high bank looking down into the drainage ditch shows that the steep banks are heavily overgrown with an almost impenetrable tangle of trees, vines and shrubs. Poison Ivy is a dominant species in the plant profile.
- 7) This photograph, taken looking down into the ditch, shows that the steep banks are littered with rubble and discarded building materials.
- 8) This photograph, taken about half-way down the side of the bank, shows that the ditch has not been maintained in many years. Vines with a three-inch or greater diameter are found throughout the study site.
- 9) This photograph, taken near the bottom of the ditch, shows the heavy overgrowth and trash that have collected on the site.
- 10) This picture, taken at the bottom of the ditch, had to be illuminated with a photographic flash because the overstory is so thick that it blocks most natural light. Thus, vegetation at the bottom of the ditch is very sparse.
- 11) This photograph, also taken with a flash at the bottom of the ditch, shows that the bottom width is narrow, the banks are steep, the ditch is dry and the site does not meet the three criteria of a jurisdictional wetland, which are the presence of hydric soil, wetland hydrology, and hydric vegetation.
- 12) One small area of saturated soil, about 2x4 feet in size, was found at the bottom of the ditch near the north end of the study area. Due to the heavy overgrowth and the difficulty we encountered in measuring exact distances in the field, OECC personnel were not able to determine if this area of saturated soil was actually within our 600 linear foot study site.







DATA FORM 1
ROUTINE WETLAND DETERMINATION
1987 COE Wetlands Delineation Manual

Applicant/Owner: Lead Products Company, Inc., 709 North Velasco Street, City of Houston
Project Site: 600 linear foot drainage ditch County: Harris State: Texas
Investigator: Elizabeth Oakes for Oakes Environmental Compliance Consultants
Date: July 1998

Location: Transect 1/Observation Point One: Top bank of the subject drainage ditch on the west side of the Lead Products Company Inc. plant site. Do Normal Circumstances Exist on the Site? Yes
Is the site significantly disturbed? No. Site is not a potential problem area.

VEGETATION

| Dominant Species | Percentage | Indicator Status |
|------------------|------------|------------------|
|------------------|------------|------------------|

Trees:

| | | |
|------------------|-----|--------|
| Celtis laevigata | 40% | FAC |
| Melia azedarach | 20% | Exotic |

Saplings/shrubs:

| | | |
|------------------|-----|-------|
| Sapium sebiferum | 50% | FACU+ |
|------------------|-----|-------|

Woody vines:

| | | |
|-----------------------------|-----|-----|
| Toxicodendron radicans | 60% | FAC |
| Vitus rotundifolia | 20% | FAC |
| Parthenocissus quinquefolia | 10% | FAC |
| Campsis radicans | 5% | FAC |

Herbs/grasses:

| | | |
|------------------|-----|-------|
| Cynodon dactylon | 30% | FACU+ |
|------------------|-----|-------|

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): greater than 50%

Other Indicators: Location is on the steep bank of a man-made drainage ditch.

SOIL

Series and Phase: Urban Complex Soil (Ur)

On hydric soils list? No

Mottled: No Mottle color: N/A Matrix color: 10YR 4/2 Gleyed? No

Other indicators: (High Organic Content in Surface Layer of Sandy Soils, Organic Streaking in Sandy Soils, Sulfidic Odor, Aquic Moisture Regime, Reducing Conditions?) No

Field Observations Confirm Mapped Type? Yes

Hydric soil? No Basis: Field observation

HYDROLOGY

Inundated? No

Depth of standing water: None

Saturated in upper 12 inches (depth to free water in pit:) No

Other indicators: (sediment deposits, water marks, drainage patterns, drift lines, oxidized root channels, in upper 12 in., water-stained leaves) None

Recorded Data: (Stream, lake, tide gauge, aerial photographs, other:) None

Wetland hydrology? No Basis: Field Observation

WETLAND DETERMINATION: Site is NOT a Jurisdictional Wetland.

DATA FORM 1
ROUTINE WETLAND DETERMINATION
1987 COE Wetlands Delineation Manual

Applicant/Owner: Lead Products Company, Inc., 709 North Velasco Street, City of Houston
Project Site: 600 linear foot drainage ditch County: Harris State: Texas
Investigator: Elizabeth Oakes for Oakes Environmental Compliance Consultants
Date: July 1998

Location: Transect 1/Observation Point 2: Bottom width of the subject drainage ditch on the west side of the Lead Products Company Inc. plant site. Do Normal Circumstances Exist on the Site? Yes
Is the site significantly disturbed? No. Site is not a potential problem area.

VEGETATION

| Dominant Species | Percentage | Indicator Status |
|------------------|------------|------------------|
|------------------|------------|------------------|

Trees:

None

Saplings/shrubs:

None

Woody vines:

| | | |
|-----------------------------|-----|-----|
| Toxicodendron radicans | 60% | FAC |
| Vitus rotundifolia | 20% | FAC |
| Parthenocissus quinquefolia | 10% | FAC |
| Campsis radicans | 5% | FAC |

Herbs/grasses:

None

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): greater than 50%

Other Indicators: Location is on the steep bank of a man-made drainage ditch.

SOIL

Series and Phase: Urban Complex Soil (Ur)

On hydric soils list? No

Mottled: No Mottle color: N/A Matrix color: 10YR 4/2 Gleyed? No

Other indicators: (High Organic Content in Surface Layer of Sandy Soils, Organic Streaking in Sandy Soils, Sulfidic Odor, Aquic Moisture Regime, Reducing Conditions?) No

Field Observations Confirm Mapped Type? Yes

Hydric soil? No Basis: Field observation

HYDROLOGY

Inundated? No

Depth of standing water: None

Saturated in upper 12 inches (depth to free water in pit:) No

Other indicators: (sediment deposits, water marks, drainage patterns, drift lines, oxidized root channels, in upper 12 in., water-stained leaves) Yes, ripple marks in sand on bottom of drainage way

Recorded Data: (Stream, lake, tide gauge, aerial photographs, other:) None

Wetland hydrology? No Basis: Field Observation

WETLAND DETERMINATION: Site is NOT a Jurisdictional Wetland.

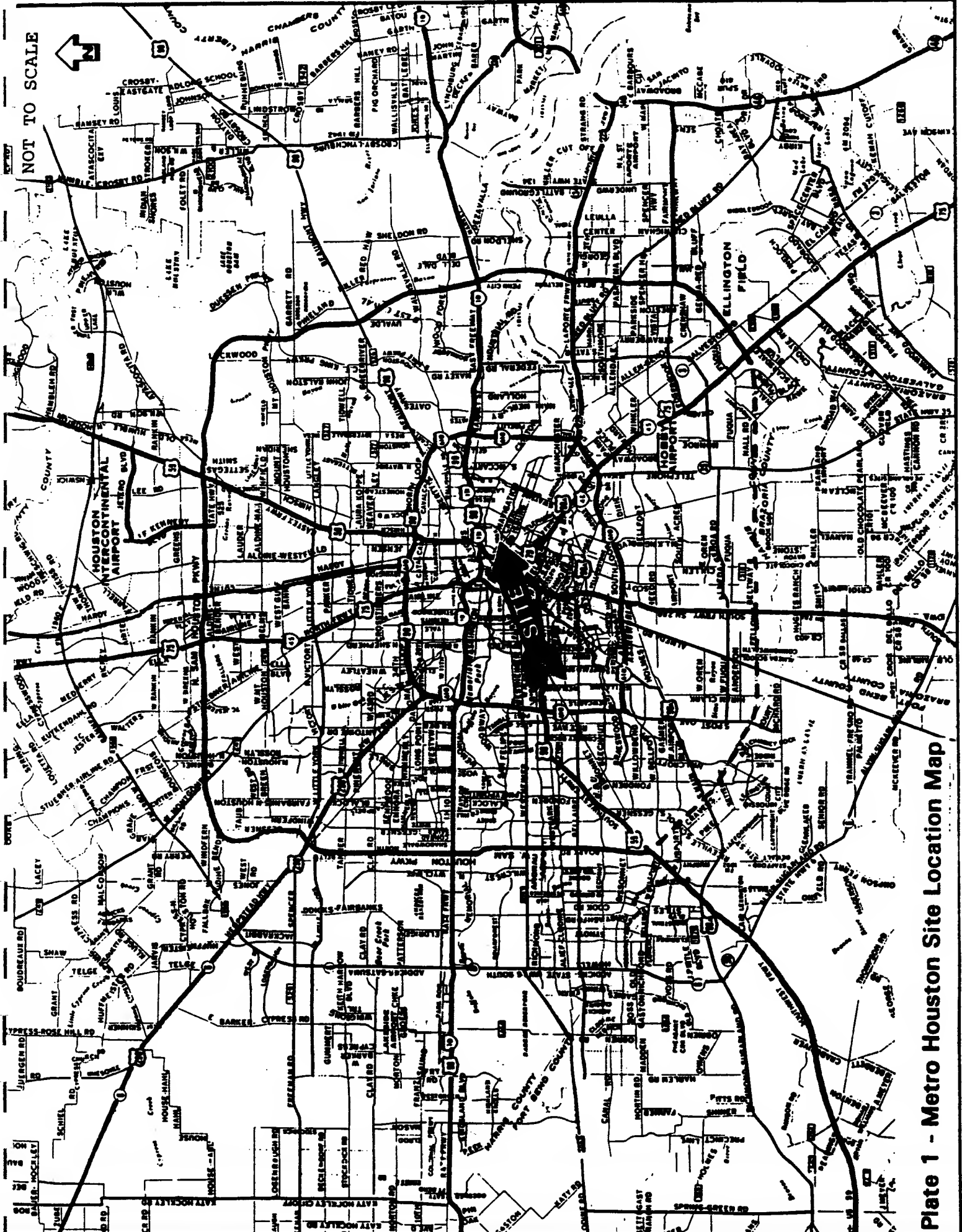
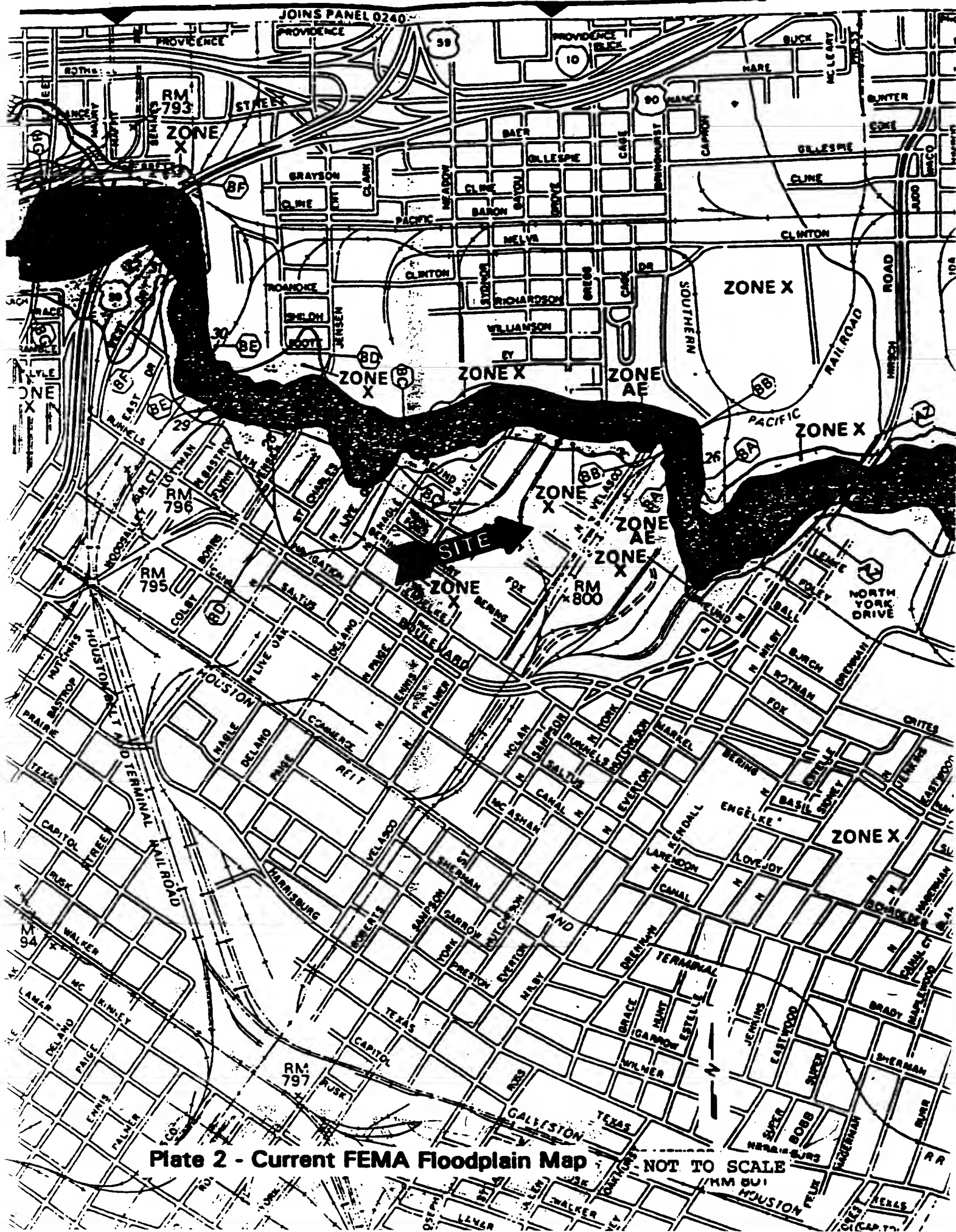


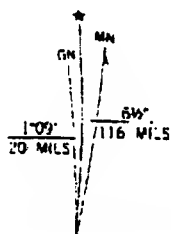
Plate 1 - Metro Houston Site Location Map



ENT BY:

7-17-98 :11:13AM :

2814637369:# 2/ 3



SETTEGAST
QUADRANGLE

SCALE 1:24 000

CONTOUR INTERVAL 5 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

Plate 3 - U.S.G.S. Topographic Map

1911 AND 1982 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY

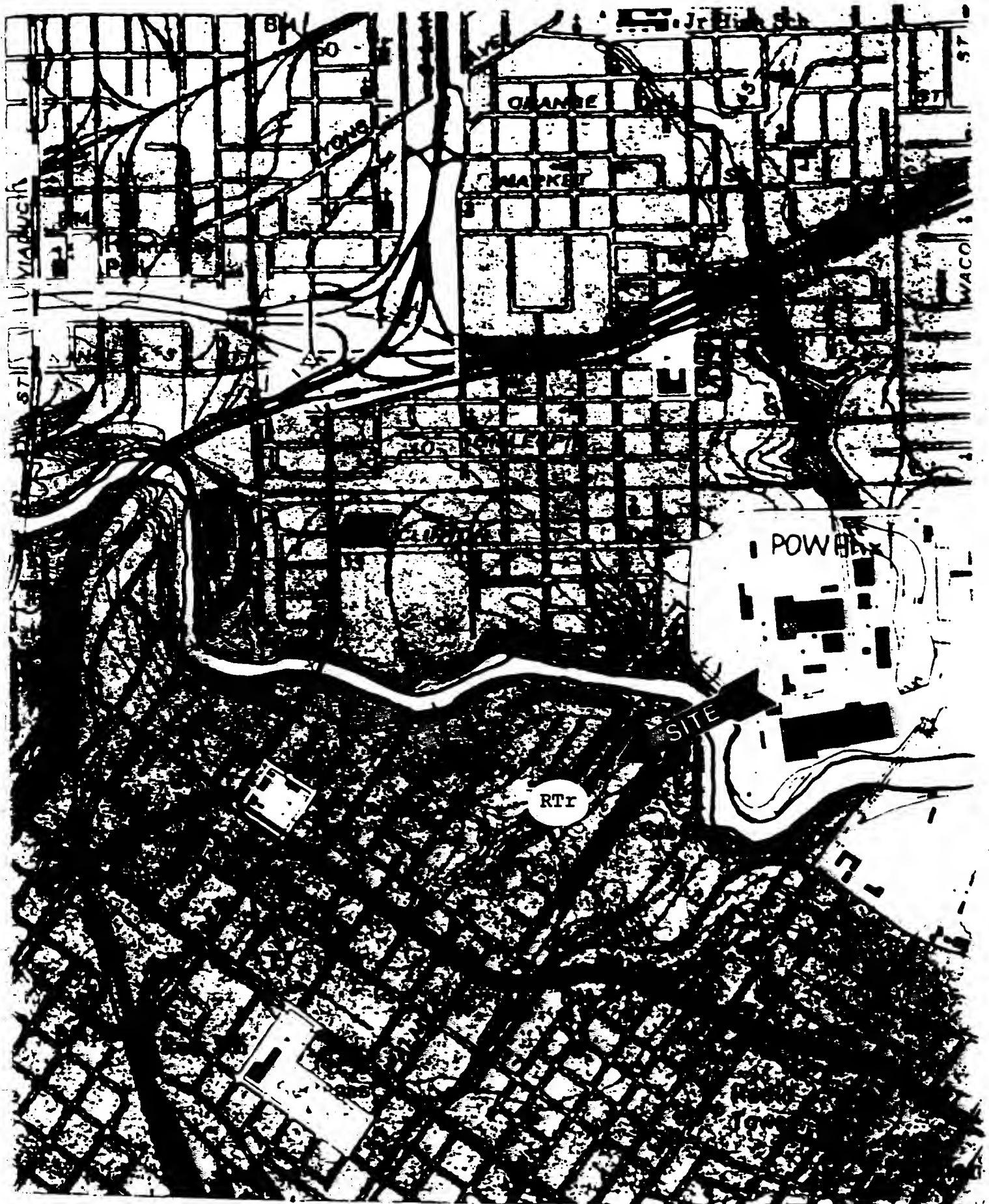


Plate 4 - National Wetland Inventory Map

NOT TO SCALE

N
1

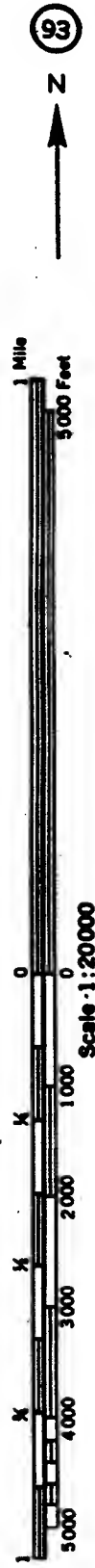
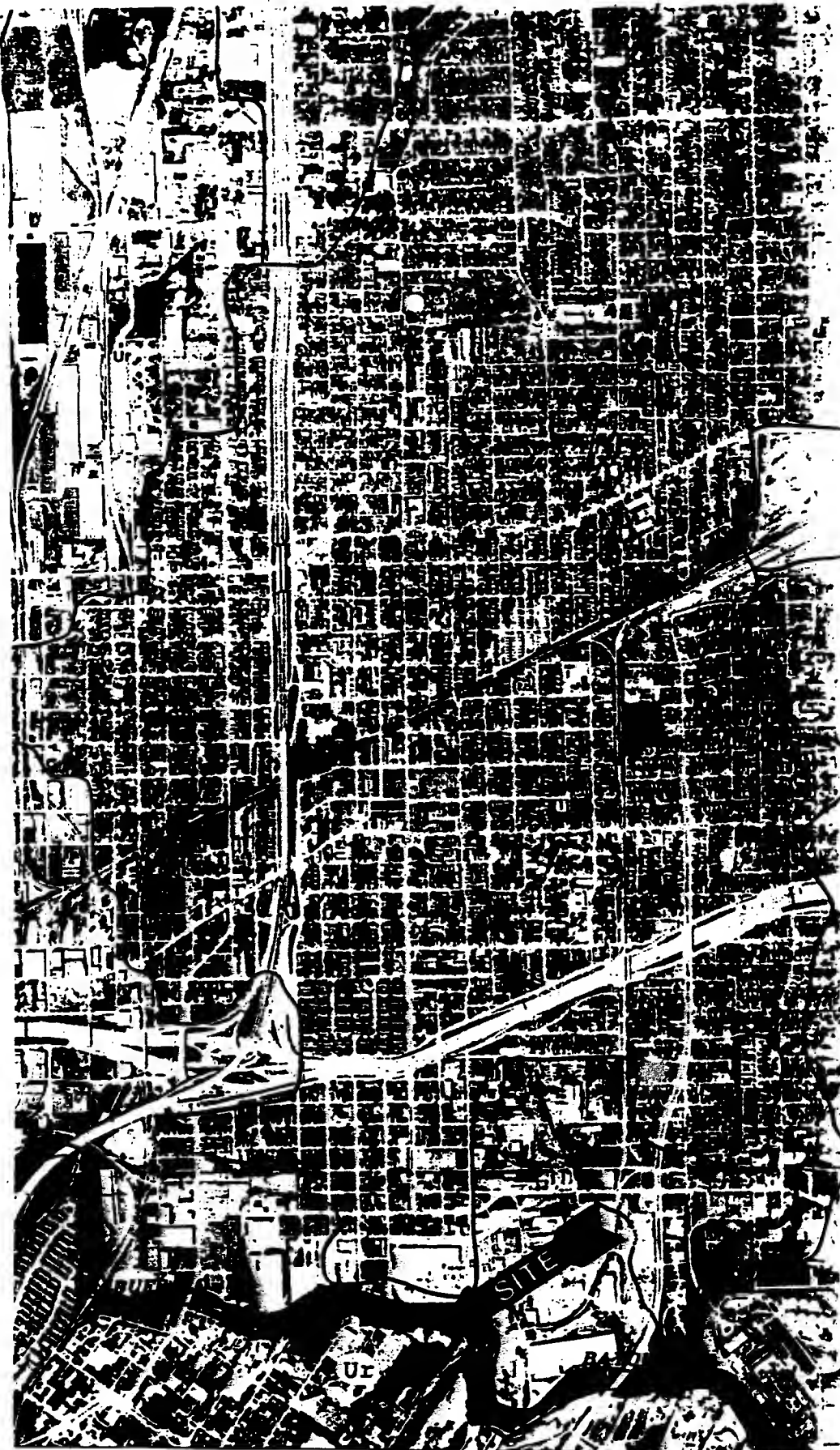


Plate 5 - S.C.S. Soils Map

APPENDIX I

WESTON ANALYTICAL DATA

CHILDS PROPERTY INVESTIGATION
AND
SITE CHARACTERIZATION ACTIVITIES

TABLE I-1

**SUMMARY OF GROUNDWATER ELEVATION DATA
LEAD PRODUCTS COMPANY, INC.
NORTH VELASCO ROAD PROPERTY
HOUSTON, TEXAS**

| WELL NO. | GROUND SURFACE ELEVATION (ft. MSL) | TOP OF CASING ELEVATION (ft. MSL) | DEPTH TO WATER (ft.)¹ | WATER TABLE ELEVATION (ft. MSL) |
|-----------------|---|--|---|--|
| (LP)MW-1 | 35.52 | 37.97 | 11.67 | 26.30 |
| (LP)MW-2 | 33.38 | 36.30 | 13.40 | 22.90 |
| (LP)MW-3 | 32.39 | 35.13 | 13.59 | 21.54 |
| (LP)MW-4 | 35.72 | 35.50 | 14.06 | 21.44 |
| (LP)MW-5 | 34.34 | 36.89 | 12.46 | 24.43 |
| (HCI)MW-1 | 28.47 | 30.88 | 13.91 | 16.97 |
| (COH)MW-1 | 33.70 | 36.15 | 21.46 | 14.69 |

NOTES:

¹ Measurements were recorded on a site visit on 23 February 1999.

TABLE I-2

SOIL ANALYTICAL RESULTS

CHILDS TRUCK EQUIPMENT PROPERTY
(NOVEMBER 1996)

| ANALYTE | | SAMPLE LOCATIONS AND IDENTIFICATIONS | | | | | | | | | | | | | |
|------------------------------------|-----------------|--------------------------------------|---------|--------|---------|---------|---------|---------|---------|--------|---------|---------|---------|---------|---------|
| | | GP01-1 | GP01-18 | GP01-1 | GP02-17 | GP03-2 | GP03-19 | GP04-2 | GP04-19 | GP05-1 | GP05-8 | GP05-21 | GP06-1 | GP06-18 | GP07-18 |
| RCRA Metals (mg/kg) | | | | | | | | | | | | | | | |
| Arsenic | < 0.06 | < 0.06 | < 0.06 | < 0.06 | < 0.06 | < 0.06 | < 0.06 | < 0.06 | < 0.06 | < 0.06 | < 0.06 | < 0.06 | < 0.06 | < 0.06 | < 0.06 |
| Barium | 44.84 | 3.73 | 141.42 | 24.61 | 180.21 | 2.10 | 188.91 | 5.05 | 80.15 | 32.00 | 12.94 | 77.24 | 2.99 | 2.88 | |
| Cadmium | < 0.06 | < 0.06 | 1.46 | < 0.06 | < 0.06 | < 0.06 | < 0.06 | < 0.06 | < 0.06 | < 0.06 | < 0.06 | 0.56 | < 0.06 | < 0.06 | |
| Chromium | 4.37 | 2.43 | 10.04 | 4.84 | 17.14 | 0.87 | 14.01 | 2.53 | 10.11 | 4.73 | 4.37 | 7.46 | 1.68 | 1.80 | |
| Lead | 41.47 | 0.93 | 2390.51 | 99.61 | 141.17 | 0.35 | 87.55 | 4.87 | 110.31 | 37.82 | 71.33 | 1417.91 | 1.31 | 1.08 | |
| Mercury | 0.057 | < 0.025 | 0.052 | 0.029 | < 0.025 | < 0.025 | 0.053 | < 0.025 | < 0.025 | 0.06 | < 0.025 | 0.031 | < 0.025 | < 0.025 | |
| Selenium | < 0.07 | < 0.07 | < 0.07 | < 0.07 | < 0.07 | < 0.07 | < 0.07 | < 0.07 | < 0.07 | < 0.07 | < 0.07 | < 0.07 | < 0.07 | < 0.07 | |
| Silver | < 0.06 | < 0.06 | < 0.06 | < 0.06 | < 0.06 | < 0.06 | < 0.06 | < 0.06 | < 0.06 | < 0.06 | < 0.06 | < 0.06 | < 0.06 | < 0.06 | |
| Volatile Organic Compounds (ug/kg) | | | | | | | | | | | | | | | |
| Carbon disulfide | ND ¹ | ND | 5 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Methylene chloride | ND | ND | 29 | ND | 31 | ND | 16 | ND | ND | ND | ND | 21 | ND | ND | ND |

NOTES:

¹ ND = Not Detected.² Sample GP07-18 is a duplicate of sample GP06-18.

TABLE I-3

SOIL ANALYTICAL RESULTS
SITE CHARACTERIZATION ACTIVITIES
(JUNE 1998)

| SAMPLE LOCATIONS AND IDENTIFICATIONS | | | | | | | | | | | | | | | |
|--------------------------------------|-----------------|---------|----------|--------|----------|-----------------------------|-----------------|---------|----------|---------|----------------------------|---------|---------|----------|---------------------|
| ANALYTE | BACKGROUND | | | | | LEAD PRODUCTS COMPANY, INC. | | | | | HOUSTON CENTRAL INDUSTRIES | | | | |
| | SS01 | SS02 | SS03 | SS04 | SS05 | SB02-2 ⁴ | SB02-3 | SB04-2 | SB04-7 | SB05-2 | SB06-2 | SB07-2 | SB08-2 | SB11-2 | SB12-2 ¹ |
| RCRA Metals (mg/kg) | | | | | | | | | | | | | | | |
| Barium | 372 | 105 | 233 | 85.3 | 59.4 | 5,290 | 65.7 | 146 | 20.7 | 60 | 73.7 | 77.4 | 176 | 65.6 | 69.6 |
| Cadmium | 2.17 | 2.21 | 5.19 | 5.03 | 1.41 | 3.12 | 0.762 | 3.69 | 0.202 | 4.5 | 1.76 | 1.42 | 4.01 | 0.893 | 0.749 |
| Chromium | 13.6 | 69.4 | 953 | 18.3 | 6.93 | 7.62 | 13 | 9.04 | 11.7 | 17.9 | 14.4 | 6.73 | 22.4 | 7.74 | 8.3 |
| Cobalt | 3.87 | 3.22 | 3.65 | 2.81 | 1.59 | 5.18 | 3.45 | 3.32 | 2.35 | 1.83 | 2.22 | 1.94 | 3.7 | 2.78 | 3 |
| Lead | 205 | 375 | 72.5 | 1,250 | 566 | 14,700 | 167 | 23,500 | 73 | 10,700 | 257 | 407 | 1,570 | 1,430 | 523 |
| Nickel | 10.1 | 10.1 | 7.21 | 11.6 | 4.42 | 10.2 | 41 | 10.3 | 4.63 | 12.8 | 5.31 | 5.2 | 18.5 | 4.12 | 3.7 |
| Selenium | < 0.453 | < 0.376 | < 0.499 | < 0.41 | < 0.402 | < 0.453 | < 0.346 | < 0.474 | < 0.48 | < 0.447 | < 0.445 | < 0.315 | < 0.297 | < 0.372 | < 0.407 |
| Silver | < 0.453 | < 0.376 | < 0.499 | 3.1 | < 0.402 | < 0.453 | < 0.346 | < 0.474 | < 0.48 | 0.948 | < 0.445 | < 0.315 | 0.95 | < 0.372 | < 0.407 |
| Zinc | 257 | 188 | 109 | 670 | 215 | 1,060 | 46.4 | 1,100 | 32.7 | 1,420 | 110 | 103 | 484 | 357 | 239 |
| Antimony | 0.605 | 3.94 | 0.207 | 14 | 3.5 | 23.8 | 2.27 | 6.76 | 0.988 | 4.53 | 0.555 | 0.53 | 2.73 | 6.54 | 3.82 |
| Arsenic | 2.34 | 7.95 | 0.376 | 65.8 | 87.6 | 50.5 | < 0.165 | 0.609 | 1.95 | 0.287 | 2.12 | 1.79 | 0.423 | 4.03 | 3.12 |
| Mercury | < 0.103 | 0.105 | < 0.0951 | 0.336 | < 0.0998 | < 0.101 | < 0.0996 | 0.108 | < 0.1 | 0.345 | 2.49 | 0.158 | < 0.104 | < 0.0979 | < 0.0988 |
| Semi-Volatile Organics (ug/kg) | | | | | | | | | | | | | | | |
| Hexachlorobutadiene | NA ¹ | NA | NA | NA | NA | NA | 1000 | NA | < 16,000 | NA | NA | NA | NA | NA | NA |
| Volatile Organic Compounds (ug/kg) | | | | | | | | | | | | | | | |
| Method 8260 Compounds | NA | NA | NA | NA | NA | NA | ND ² | NA | ND | NA | NA | NA | NA | NA | NA |
| Polychlorinated Biphenyls (mg/kg) | | | | | | | | | | | | | | | |
| Method 8080 Compounds | NA | NA | NA | NA | NA | NA | ND | NA | ND | NA | NA | NA | NA | NA | NA |

NOTES:

¹ NA = Not Analyzed.² ND = Not Detected.³ Sample SB12-2 is a duplicate of sample SB11-2.⁴ SB02-2 indicates that the sample was collected 2 ft. bgs at station SB02.

DEVIATION FROM WORK PLAN:

1. Samples SB02-3 and SB04-7 were not analyzed for SVOCs, VOCs, and PCBs.

TABLE I-4
GROUNDWATER ANALYTICAL RESULTS
SITE CHARACTERIZATION ACTIVITIES
(JUNE 1998)

| SAMPLE LOCATIONS AND IDENTIFICATIONS | | | | | |
|--------------------------------------|----------------------------|-------------------------|---------------|-------------------------|--------------------|
| ANALYTE | HOUSTON CENTRAL INDUSTRIES | | LEAD PRODUCTS | | RS-01 ² |
| | (HCD)MW-1 | (HCD)MW-1 | (LP)MW-5 | (LP)MW-5 | |
| | (Unfiltered) | (Filtered) ¹ | (Unfiltered) | (Filtered) ¹ | |
| Metals (ug/L) | | | | | |
| Barium | 215 | 250 | 28.1 | 28.4 | < 10 |
| Cadmium | 2.6 | < 2 | < 2 | < 2 | < 2 |
| Chromium | < 5 | < 5 | < 5 | < 5 | < 5 |
| Cobalt | 6.3 | < 5 | < 5 | < 5 | < 5 |
| Lead | < 3 | < 3 | < 3 | < 3 | < 3 |
| Nickel | < 10 | < 10 | < 10 | < 10 | 15.5 |
| Selenium | < 5 | < 5 | < 5 | < 5 | 6.2 |
| Silver | < 5 | < 5 | < 5 | < 5 | < 5 |
| Zinc | 41.3 | 74.9 | < 20 | < 20 | < 20 |
| Antimony | < 6 | < 6 | < 6 | < 6 | < 6 |
| Arsenic | < 10 | < 10 | < 10 | < 10 | < 10 |
| Mercury | < 0.2 | < 0.2 | < 0.2 | < 0.2 | < 0.2 |

NOTES:

¹ Sample was filtered in the field with a 10 micron filter prior to analysis.

² This was a rinsate sample collected at sample location SB11.

³ It should be noted that no groundwater samples were collected from the well location on the City of Houston property [(COH)MW-1] due to the inability to recover any water during development.

DEVIATION FROM WORK PLAN:

1. No groundwater duplicate sample was collected.

**TABLE I-5
GROUNDWATER LEAD RESULTS**

| WELL ID. | TOTAL LEAD (mg/l) | DISSOLVED LEAD (mg/l) |
|--------------------------------|----------------------------------|--------------------------------------|
| SAMPLING DATE: 11/5/90 | | |
| (LP)MW-1 | <0.025 | <0.025 |
| (LP)MW-2 | 3.2 | 2.1 |
| (LP)MW-3 | 0.04 | <0.025 |
| (LP)MW-4 | <0.025 | <0.025 |
| SAMPLING DATE: 2/15/96 | | |
| (LP)MW-1 | <0.02 | <0.02 |
| (LP)MW-2 | 0.94 | 0.91 |
| (LP)MW-3 | <0.02 | <0.02 |
| (LP)MW-4 | <0.02 | <0.02 |
| SAMPLING DATE: 9/4/96 | | |
| (LP)MW-1 | <0.02 | <0.02 |
| (LP)MW-2 | 1.31 | 1.05 |
| (LP)MW-3 | 0.07 | <0.02 |
| (LP)MW-4 | <0.02 | <0.02 |
| SAMPLING DATE: 3/28/97 | | |
| (LP)MW-1 | <0.002 | 0.0013 |
| (LP)MW-2 | 1.16 | 0.85 |
| (LP)MW-3 | 0.018 | 0.0031 |
| (LP)MW-4 | 0.027 | 0.0016 |
| SAMPLING DATE: 6/26/97 | | |
| (LP)MW-1 | <0.005 | <0.005 |
| (LP)MW-2 | 1.68 | 1.69 |
| (LP)MW-3 | 0.014 | 0.0053 |
| (LP)MW-4 | <0.005 | 0.0067 |
| SAMPLING DATE: 12/22/97 | | |
| (LP)MW-1 | <0.002 | <0.002 |
| (LP)MW-2 | 1.97 | 1.97 |
| (LP)MW-3 | 0.011 | 0.0063 |
| (LP)MW-4 | 0.0021 | <0.002 |
| SAMPLING DATE: 6/11/98 | | |
| (LP)MW-1 | <0.002 | <0.002 |
| (LP)MW-2 | 1.17 | 0.924 |
| (LP)MW-3 | <0.002 | 0.039 |
| (LP)MW-4 | 0.0032 | <0.002 |
| (LP)MW-5 | <0.003 | <0.003 |
| (HCI)MW-1 | <0.003 | <0.003 |
| SAMPLING DATE: 12/9/98 | | |
| (LP)MW-1 | <0.002 | <0.002 |
| (LP)MW-2 | 0.933 | 0.747 |
| (LP)MW-3 | <0.002 | <0.002 |
| (LP)MW-4 | 0.00347 | <0.002 |

APPENDIX J
WESTON SOIL BORING LOGS

| | | | | | | |
|--------------------------------|------------------------|----------------------------|--|-----------------------------|------------------------|------------------|
| GEOLOGIC DRILL LOG | | | PROJECT NAME/LOCATION CHILD'S APT 1 HOUSTON | | PAGE NO. 2 of 2 | WELL NO. LP01 |
| DATE STARTED 11-26 | DATE FINISHED 11-26 | DRILLER Terra Tech | DRILL METHOD Geoprobe | BOREHOLE DIAMETER (in) 1 | TOTAL DEPTH (ft) 20 | |
| GEOLOGIST/ENGINEER S. Maxey | | GROUND ELEVATION (ft. MSL) | | COORDINATES (ft) | | |

| DEPTH | SAMPLE INTERVAL | RECOVERY (%) | SAMPLE TYPE | SAMPLE ID | AIR MONITOR. RESULT | USCS | WELL CONSTRUCTION | DEPTH | PP/TOR | VISUAL DESCRIPTION |
|-------|-----------------|--------------|-------------|-----------|---------------------|------|-------------------|-------|--------|---|
| | | | | | | SC | DIA | | | See as above to 12 feet. |
| 11 | | | | | | | | 1 | 11 | See as above to 12 feet. |
| 12 | | 48/48 | | | | | | 1 | 12 | See as above to 15 feet |
| 13 | | | | | | | | 3 | 13 | |
| 14 | | | | | | | | 2 | 14 | |
| 15 | | | | | | SP | | 1 | 15 | sand: pale yell. brn., wet, fine grained, loose, to 16 feet |
| 16 | | 48/48 | | | | | | 2 | 16 | same as above to 17 feet |
| 17 | | | | | | | | 60 | 17 | becoming sat. |
| 18 | | | | | | CA | | 50 | 18 | clay: pale yell. brn., stiff, moist, high plast. to 20 feet |
| 19 | | | | | | | | 1 | 19 | |
| | | | | | | | | 1 | | |

TD=20

A = ANALYTICAL SAMPLE
G = GEOTECHNICAL SAMPLE
R = ARCHIVED SAMPLE

WESTON

PAGE NO.
2 of 2

WELL NO.
LP01

| | | | | | | | |
|---------------------------------------|-------------------------------|------------------------------|----------------------------------|---|-------------------------------------|-------------------------------|-------------------------|
| GEOLOGIC DRILL LOG | | | | PROJECT NAME/LOCATION <i>CHILDS PROP 1 Houston</i> | | PAGE NO. <i>1 of 2</i> | WELL NO. <i>6702</i> |
| DATE STARTED <i>11-26</i> | DATE FINISHED <i>11-26</i> | DRILLER <i>Terra Tech</i> | DRILL METHOD <i>Geo Probe</i> | | BOREHOLE DIAMETER (in) <i>1"</i> | TOTAL DEPTH (ft) <i>20</i> | |
| GEOLOGIST/ENGINEER <i>S. Maxey</i> | | GROUND ELEVATION (ft. MSL) | | COORDINATES (ft) | | | |

11:15

| DEPTH | SAMPLE INTERVAL | RECOVERY (%) | SAMPLE TYPE | SAMPLE ID | AIR MONITOR. RESULT | USCS | WELL CONSTRUCTION | DEPTH | PP/TOR | VISUAL DESCRIPTION |
|-------|------------------------|--------------|-------------|-----------|---------------------|-----------|-------------------|-------|--------|---|
| | | | | | | | <i>O/A</i> | | | |
| | | | | | | | | | | Fill to 2 feet |
| 1 | <i>4B</i> <i>4B</i> | | | | | | | 1 | | w/ gravel & black staining |
| 2 | | | | | | <i>SC</i> | | 2 | | becoming clayey sand, lt. brn. w/ gravel and staining to 4 feet |
| 3 | | | | | | | | 3 | | |
| 4 | <i>4B</i> <i>4B</i> | | | | | | | 4 | | same as above to 5 feet |
| 5 | | | | | | <i>CL</i> | | 5 | | sandy clay: dk. yell. orange, fine mod. dense, low plastic, moist to 8 feet |
| 6 | | | | | | | | 6 | | |
| 7 | | | | | | | | 7 | | |
| 8 | <i>4B</i> <i>4B</i> | | | | | | | 8 | | same as above to 12 feet |
| 9 | | | | | | | | 9 | | |

| | | | | | | | |
|---------------------------------------|-------------------------------|------------------------------|------------------------------------|--|------------------------------------|-------------------------------|-------------------------|
| GEOLOGIC DRILL LOG | | | | PROJECT NAME/LOCATION <i>Childs Prod. 1 Houston</i> | | PAGE NO. <i>2 of 2</i> | WELL NO. <i>6P02</i> |
| DATE STARTED <i>11-26</i> | DATE FINISHED <i>11-26</i> | DRILLER <i>Terra Tech</i> | DRILL METHOD <i>Ocean Probe</i> | | BOREHOLE DIAMETER (in) <i>1</i> | TOTAL DEPTH (ft) <i>20</i> | |
| GEOLOGIST/ENGINEER <i>S. Maxey</i> | | GROUND ELEVATION (ft. MSL) | | COORDINATES (ft) | | | |

DVA

| DEPTH | SAMPLE INTERVAL | RECOVERY (%) | SAMPLE TYPE | SAMPLE ID | AIR MONITOR. RESULT | USCS | WELL CONSTRUCTION | DEPTH | PP/TOR | VISUAL DESCRIPTION |
|----------|-----------------|--------------|-------------|----------------|---------------------|------|-------------------|-------|--------|---|
| | | | | | 0 | CL | | | | See as above to 12 feet. |
| 11 | | | | | 0 | | | 11 | | |
| 12 | | <i>48/48</i> | | | 0 | | | 12 | | See as above to 14 feet |
| 13 | | | | | 0 | | | 13 | | |
| 14 | | | | | 0 | SP | | 14 | | Sand: pale yell. brn., loose, fine grained, wet to 16 feet. |
| 15 | | | | | 0 | | | 15 | | |
| 16 | | <i>48/48</i> | | | 0 | | | 16 | | Same as above to 17 feet. becoming saturated. |
| 11:45 17 | | | <i>S</i> | <i>6P02-17</i> | 0 | CH | | 17 | | Clay: pale yell. brn., stiff, moist, high plast. to 20 feet |
| 18 | | | | | 0 | | | 18 | | |
| 19 | | | | | 0 | | | 19 | | |
| | | | | | 0 | | | | | |

A = ANALYTICAL SAMPLE
G = GEOTECHNICAL SAMPLE
R = ARCHIVED SAMPLE

WESTON

PAGE NO.
2 of 2

WELL NO.
6P02

BIC DRILL LOG

PROJECT NAME/LOCATION

CHILDS PROD 1 HOUSTON

PAGE NO.

1 of 2

WELL NO.

6P03

DATE FINISHED

11-26

DRILLER

Terra Tech

DRILL METHOD

Geo Probe

BOREHOLE DIAMETER (in)

1 1/4

TOTAL DEPTH (ft)

20

GEOLOGIST/ENGINEER

S. Maxey

GROUND ELEVATION (ft. MSL)

COORDINATES (ft)

| DEPTH | SAMPLE INTERVAL | RECOVERY (%) | SAMPLE TYPE | SAMPLE ID | AIR MONITOR. RESULT | USCS | WELL CONSTRUCTION | DEPTH | PP/TOR | VISUAL DESCRIPTION |
|-------|-----------------|--------------|-------------|-----------|---------------------|------|-------------------|-------|--------|---|
| 1 | 24/48 | | | | 0 | Fill | | 1 | | FILL TO 4 feet |
| 2 | | | S | 6203-2 | 0 | | | 2 | | black staining to 4 feet |
| 3 | | | | | 0 | | | 3 | | |
| 4 | 48/48 | | | | 0 | CL | | 4 | | sandy clay; pale yell. brn., soft, low plast. moist to 8 feet |
| 5 | | | | | 0 | | | 5 | | |
| 6 | | | | | 0 | | | 6 | | becoming increasing sand content |
| 7 | | | | | 0 | | | 7 | | |
| 8 | 48/48 | | | | 0 | | | 8 | | same as above to 12 feet |
| 9 | | | | | 0 | | | 9 | | |

A = ANALYTICAL SAMPLE
G = GEOTECHNICAL SAMPLE
R = ARCHIVED SAMPLE

WESTON

PAGE NO.

1 of 2

WELL NO.

6P03

| GEOLOGIC DRILL LOG | | | PROJECT NAME/LOCATION | | | PAGE NO. | WELL NO. |
|--------------------|---------------|----------------------------|------------------------|------------------|------------------------|------------------|----------|
| | | | CHILD'S PROP 1 Houston | | | 2 of 2 | 6703 |
| DATE STARTED | DATE FINISHED | DRILLER | DRILL METHOD | | BOREHOLE DIAMETER (in) | TOTAL DEPTH (ft) | |
| 11-26 | 11-26 | Terra Tech | Geo Probe | | 1" | 20 | |
| GEOLOGIST/ENGINEER | | GROUND ELEVATION (ft. MSL) | | COORDINATES (ft) | | | |
| S. Maxcey | | | | | | | |

| DEPTH | SAMPLE INTERVAL | RECOVERY (%) | SAMPLE TYPE | SAMPLE ID | AIR MONITOR. RESULT | USCS | WELL CONSTRUCTION | DEPTH | PP/TOR | VISUAL DESCRIPTION |
|-------|-----------------|--------------|-------------|-----------|---------------------|------|-------------------|-------|--------|---|
| | | | | | 0 | CL | | | | same as above to 12 feet |
| 11 | | | | | 0 | | | 11 | | |
| 12 | | | | | 0 | | | 12 | | same as above to 16 feet |
| 13 | | | | | 0 | | | 13 | | |
| 14 | | | | | 0 | | | 14 | | |
| 15 | | | | | 0 | | | 15 | | |
| 16 | | | | | 0 | SP | | 16 | | same as above to 16.5 feet |
| 17 | | | | | 0 | | | 17 | | sand: pale yel. brn., saturated, fine grn. loose to 19.5 feet |
| 18 | | | | | 0 | | | 18 | | |
| 19 | | | | | 2 | | | 19 | | |
| | | | | | 0 | CH | | | | clay, med. yel. brn., high plast., stiff, moist to 20 feet |

A = ANALYTICAL SAMPLE
G = GEOTECHNICAL SAMPLE
R = ARCHIVED SAMPLE

PAGE NO. 2 of 2
WELL NO. 6703

13:10

| | | | | | | |
|---------------------------------|------------------------|----------------------------|---|---------------------------------|------------------------|------------------|
| GEOLOGIC DRILL LOG | | | PROJECT NAME/LOCATION CHILDS PROP, HOUSTON | | PAGE NO. 1 of 2 | WELL NO. 6P04 |
| DATE STARTED 11-26 | DATE FINISHED 11-26 | DRILLER Terra Tech | DRILL METHOD Geo Probe | BOREHOLE DIAMETER (in) 1 1/8 | TOTAL DEPTH (ft) 20 | |
| GEOLOGIST/ENGINEER S. Maycey | | GROUND ELEVATION (ft. MSL) | | COORDINATES (ft) | | |

| DEPTH | SAMPLE INTERVAL | RECOVERY(%) | SAMPLE TYPE | SAMPLE ID | AIR MONITOR. RESULT | USCS | WELL CONSTRUCTION | DEPTH | PP/TOR | VISUAL DESCRIPTION |
|-------|-----------------|-------------|-------------|-----------|---------------------|------|-------------------|-------|--------|---|
| | | | | | | | | | | |
| | | | | | | | | | | |
| 1 | | 48/48 | | | 0 | FILL | | 1 | | Fill To 4 feet |
| 2 | | | S | 6P04-2 | 0 | | | 2 | | black staining to 4 feet |
| 3 | | | | | 0 | | | 3 | | |
| 4 | | 48/48 | | | 0 | CL | | 4 | | clay, dk yell. orange, low plast., soft, wet to 8 feet. |
| 5 | | | | | 0 | | | 5 | | |
| 6 | | | | | 0 | | | 6 | | |
| 7 | | | | | 0 | | | 7 | | |
| 8 | | 48/48 | | | 0 | | | 8 | | see as above to 12 feet |
| 9 | | | | | 0 | | | 9 | | |

A = ANALYTICAL SAMPLE
 G = GEOTECHNICAL SAMPLE
 R = ARCHIVED SAMPLE

WESTON

PAGE NO. WELL NO.

12 6P04

| | | | | | | |
|--|-------------------------------|------------------------------|---|-------------------------------------|-------------------------------|-------------------------|
| GEOLOGIC DRILL LOG | | | PROJECT NAME/LOCATION <i>CHILDS PROP 1 HOUSTON</i> | | PAGE NO. <i>2 of 2</i> | WELL NO. <i>6P04</i> |
| DATE STARTED <i>11-26</i> | DATE FINISHED <i>11-26</i> | DRILLER <i>Terra Tech</i> | DRILL METHOD <i>Geo Probe</i> | BOREHOLE DIAMETER (in) <i>1"</i> | TOTAL DEPTH (ft) <i>20</i> | |
| GEOLOGIST/ENGINEER <i>S. Maxcey</i> | | GROUND ELEVATION (ft. MSL) | | COORDINATES (ft) | | |

| DEPTH | SAMPLE INTERVAL | RECOVERY (%) | SAMPLE TYPE | SAMPLE ID | AIR MONITOR. RESULT | USCS | WELL CONSTRUCTION | DEPTH | PP/TOR | VISUAL DESCRIPTION |
|-----------|------------------------|--------------|-------------|----------------|---------------------|-----------|-------------------|-----------|--------|---|
| | | | | | | | | | | <i>See as above to 12 feet</i> |
| <i>11</i> | | | | | <i>0</i> | | | <i>11</i> | | |
| <i>12</i> | <i>48</i> <i>48</i> | | | | <i>0</i> | | | <i>12</i> | | <i>See as above to 15 feet</i> |
| <i>13</i> | | | | | <i>0</i> | | | <i>13</i> | | |
| <i>14</i> | | | | | <i>0</i> | | | <i>14</i> | | |
| <i>15</i> | | | | | <i>0</i> | <i>SP</i> | | <i>15</i> | | <i>sand; wet, fine grained, pl. yell. brn., loose to 16 feet</i> |
| <i>16</i> | <i>48</i> <i>48</i> | | | | <i>0</i> | | | <i>16</i> | | <i>See as above to 19 feet</i> |
| <i>17</i> | | | | | <i>0</i> | | | <i>17</i> | | |
| <i>18</i> | | | | | <i>0</i> | | | <i>18</i> | | <i>becoming saturated</i> |
| <i>19</i> | | | <i>S</i> | <i>6P04-19</i> | <i>0</i> | <i>CH</i> | | <i>19</i> | | <i>clay; dk. yell. brn., stiff, moist, high plast. to 20 feet</i> |
| | | | | | <i>0</i> | | | | | |

14:15

A = ANALYTICAL SAMPLE
G = GEOTECHNICAL SAMPLE
R = ARCHIVED SAMPLE

WESTON

PAGE NO.
2 of 2

WELL NO.
6P04

| | | | | | | |
|---------------------------------------|-------------------------------|------------------------------|---|------------------|-------------------------------------|-------------------------------|
| GEOLOGIC DRILL LOG | | | PROJECT NAME/LOCATION <i>Childs Property Investigation</i> | | PAGE NO. <i>1 of 3</i> | WELL NO. <i>6P05</i> |
| DATE STARTED <i>11-26</i> | DATE FINISHED <i>11-26</i> | DRILLER <i>Leira Tech</i> | DRILL METHOD <i>GeoProbe</i> | | BOREHOLE DIAMETER (in) <i>1"</i> | TOTAL DEPTH (ft) <i>23</i> |
| GEOLOGIST/ENGINEER <i>S. Maxey</i> | | GROUND ELEVATION (ft. MSL) | | COORDINATES (ft) | | |

| DEPTH | SAMPLE INTERVAL RECOVERY (%) | SAMPLE TYPE | SAMPLE ID | AIR MONITOR. RESULT | USCS | WELL CONSTRUCTION | DEPTH | PP/TOR | VISUAL DESCRIPTION |
|-------|---------------------------------|-------------|---------------|------------------------|-------------|----------------------|-------|--------|--|
| 1 | <i>36/48</i> | | <i>6P05-1</i> | <i>0</i> | <i>CL</i> | | 1 | | <i>sandy clay: mod. yell. brn., soft, low plastic, moist, calc. nod. to 4 feet</i> |
| 2 | | | | <i>0</i> | | | 2 | | |
| 3 | | | | <i>0</i> | | | 3 | | |
| 4 | <i>24/48</i> | | | <i>0</i> | | | 4 | | <i>same as above to 5 feet</i> |
| 5 | | | | <i>0</i> | <i>Fill</i> | | 5 | | <i>battery casings, black to 7.5 feet</i> |
| 6 | | | | <i>0</i> | | | 6 | | |
| 7 | | | | <i>0</i> | | | 7 | | |
| 8 | <i>42/48</i> | | <i>6P05-8</i> | <i>0</i> | <i>CL</i> | | 8 | | <i>sandy clay: lt brn, moist, soft, low plasticity to 8 feet.</i> |
| 9 | | | | <i>0</i> | | | 9 | | <i>see as above to 12 feet</i> |

A = ANALYTICAL SAMPLE
 G = GEOTECHNICAL SAMPLE
 R = ARCHIVED SAMPLE

WESTON

PAGE NO.
1 of 3

WELL NO.
6P05

| | | | | | | |
|--------------------------------|------------------------|----------------------------|---|------------------------------|------------------------|------------------|
| GEOLOGIC DRILL LOG | | | PROJECT NAME/LOCATION CHIDS PROP 1 Houston | | PAGE NO. 2 of 3 | WELL NO. 6205 |
| DATE STARTED 11-26 | DATE FINISHED 11-26 | DRILLER Terra Tech | DRILL METHOD Geo Probe | BOREHOLE DIAMETER (in) 1" | TOTAL DEPTH (ft) 23 | |
| GEOLOGIST/ENGINEER S. Maxey | | GROUND ELEVATION (ft. MSL) | | COORDINATES (ft) | | |

| DEPTH | SAMPLE INTERVAL | RECOVERY (%) | SAMPLE TYPE | SAMPLE ID | AIR MONITOR. RESULT | USCS | WELL CONSTRUCTION | DEPTH | PP/TOR | VISUAL DESCRIPTION |
|-------|-----------------|--------------|-------------|-----------|---------------------|------|-------------------|-------|--------|--|
| | | | | | 0 | CL | | | | Same as above to 12 feet |
| 11 | | | | | 0 | | | 11 | | |
| 12 | 4B 11B | | | | 0 | | | 12 | | Same as above to 14 feet |
| 13 | | | | | 0 | | | 13 | | |
| 14 | | | | | 0 | SP | | 14 | | Sand: pl. yel. brn., fine grained, loose, moist to 16 feet |
| 15 | | | | | 0 | | | 15 | | |
| 16 | 3b 36 | | | | 0 | | | 16 | | Same as above to 19 feet |
| 17 | | | | | 0 | | | 17 | | |
| 18 | | | | | 0 | | | 18 | | |
| 19 | 4B 48 | | | | 0 | | | 19 | | Same as above to 22 feet becoming saturated |

A = ANALYTICAL SAMPLE
 G = GEOTECHNICAL SAMPLE
 R = ARCHIVED SAMPLE

WESTON

PAGE NO.
2 of 3

WELL NO.
6205

| | | | | | | |
|---------------------------------------|-------------------------------|------------------------------|---|-------------------------------------|-------------------------------|-------------------------|
| GEOLOGIC DRILL LOG | | | PROJECT NAME/LOCATION <i>Childs Drop 1 Houston</i> | | PAGE NO. <i>3 of 3</i> | WELL NO. <i>6705</i> |
| DATE STARTED <i>11-26</i> | DATE FINISHED <i>11-26</i> | DRILLER <i>Terra Tech</i> | DRILL METHOD <i>GeoProbe</i> | BOREHOLE DIAMETER (in) <i>1"</i> | TOTAL DEPTH (ft) <i>23</i> | |
| GEOLOGIST/ENGINEER <i>S. Maxey</i> | | GROUND ELEVATION (ft. MSL) | | COORDINATES (ft) | | |

| DEPTH | SAMPLE INTERVAL | RECOVERY (%) | SAMPLE TYPE | SAMPLE ID | AIR MONITOR. RESULT | USCS | WELL CONSTRUCTION | DEPTH | PP/TOR | VISUAL DESCRIPTION |
|--------------------|-----------------|--------------|-------------|-----------|---------------------|------|-------------------|-------|--------|--|
| | | | | | | | | | | See as above to 22 feet |
| <i>10:10</i> 21 | | | | | <i>0</i> | | <i>SP</i> | 21 | | |
| 22 | | | | | <i>0</i> | | | 22 | | clay: lt. yell brn., high plast., moist firm. to 23 feet |
| 23 | | | | | <i>0</i> | | | 23 | | TD=23 feet |
| 24 | | | | | | | | 24 | | |
| 25 | | | | | | | | 25 | | |
| 26 | | | | | | | | 26 | | |
| 27 | | | | | | | | 27 | | |
| 28 | | | | | | | | 28 | | |
| 29 | | | | | | | | 29 | | |

A = ANALYTICAL SAMPLE
 G = GEOTECHNICAL SAMPLE
 R = ARCHIVED SAMPLE

WESTON

PAGE NO.
3 of 3

WELL NO.
6705

| | | | | | | |
|--------------------------------|------------------------|----------------------------|--|-----------------------------|------------------------|------------------|
| GEOLOGIC DRILL LOG | | | PROJECT NAME/LOCATION Childs Prop 1 Houston | | PAGE NO. 1 of 2 | WELL NO. 6706 |
| DATE STARTED 11-26 | DATE FINISHED 11-26 | DRILLER Terra Tech | DRILL METHOD Geo Probe | BOREHOLE DIAMETER (in) 1 | TOTAL DEPTH (ft) 20 | |
| GEOLOGIST/ENGINEER S. Maxey | | GROUND ELEVATION (ft. MSL) | | COORDINATES (ft) | | |

| DEPTH | SAMPLE INTERVAL | RECOVERY (%) | SAMPLE TYPE | SAMPLE ID | AIR MONITOR. RESULT | USCS | WELL CONSTRUCTION | DEPTH | PP/TOR | VISUAL DESCRIPTION |
|-------|-----------------|--------------|-------------|-----------|---------------------|------|-------------------|-------|--------|--|
| 1 | 36/48 | 5 | | 6706-1 | 0 | F.I. | | 1 | | Fill to 2 feet w/ black staining |
| 2 | | | | | 0 | CL | | 2 | | sandy clay: mod. brn., soft, low plastic; moist. to 4 feet |
| 3 | | | | | 0 | | | 3 | | |
| 4 | 48/48 | | | | 0 | | | 4 | | See as above to 8 feet |
| 5 | | | | | 0 | | | 5 | | |
| 6 | | | | | 0 | | | 6 | | |
| 7 | | | | | 0 | | | 7 | | |
| 8 | 48/48 | | | | 0 | | | 8 | | See as above to 12 feet |
| 9 | | | | | 0 | | | 9 | | becoming increasingly sandy |

A = ANALYTICAL SAMPLE
 G = GEOTECHNICAL SAMPLE
 R = ARCHIVED SAMPLE

WESTON

PAGE NO.
1 of 2

WELL NO.
6706

| | | | | | | | |
|---------------------------------------|-------------------------------|------------------------------|----------------------------------|--|-------------------------------------|-------------------------------|-------------------------|
| GEOLOGIC DRILL LOG | | | | PROJECT NAME/LOCATION <i>Childs Prop. / Houston</i> | | PAGE NO. <i>2 of 2</i> | WELL NO. <i>6P06</i> |
| DATE STARTED <i>11-26</i> | DATE FINISHED <i>11-26</i> | DRILLER <i>Kerra Tech</i> | DRILL METHOD <i>Geo Probe</i> | | BOREHOLE DIAMETER (in) <i>1"</i> | TOTAL DEPTH (ft) <i>20</i> | |
| GEOLOGIST/ENGINEER <i>G. Maxey</i> | | GROUND ELEVATION (ft. MSL) | | COORDINATES (ft) | | | |

| DEPTH | SAMPLE INTERVAL | RECOVERY (%) | SAMPLE TYPE | SAMPLE ID | AIR MONITOR. RESULT | USCS | WELL CONSTRUCTION | DEPTH | PP/TOR | VISUAL DESCRIPTION |
|-------|-----------------|--------------|-------------|-----------|---------------------|------|-------------------|-------|--------|---|
| 1 | | | | | 0 | CL | | 1 | | see as above to 12 feet |
| 2 | | | | | 0 | | | 2 | | see as above to 15 feet |
| 3 | | | | | 0 | | | 3 | | |
| 4 | | | | | 0 | | | 4 | | |
| 5 | | | | | 0 | SP | | 5 | | sand: pale yel. brn, wet, fine grained loose to 16 feet |
| 6 | | | | | 0 | | | 6 | | see as above to 19.5 feet |
| 7 | | | | | 0 | | | 7 | | |
| 8 | | | | | 0 | | | 8 | | becoming saturated to 19.5 feet |
| 9 | | | | | 0 | | | 9 | | clay: lt. brn., high plast., firm, moist to 20 feet |

A = ANALYTICAL SAMPLE
 G = GEOTECHNICAL SAMPLE
 R = ARCHIVED SAMPLE

WESTON

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WELL NO.
6P06

17:50

Lead Products - Lead Products **Station: COHMW01 - Well Construction Log**

Geologist/Engineer **Grayson Pointer**

Start Date **06/09/98** Time **0700**

Drilling Method **Hollow Stem Auger**

Northing **80793.64**

End Date **06/09/98** Time **0830**

Drilling Company **BEST**

Easting **30300.71**

Borehole Diameter **6.0 inches**

Ground Elevation **33.70**

Observations:

Total Depth **20.0 feet**

Datum Elevation **36.15**

COHMW01 is located on the City of Houston property located north of the LP site. A dozer was used to clear and level brush and debris from the area. No air monitoring instrument was used during this boring.

Completion **Well Pad**

Well Casing **PVC**

Well Diameter **4.0 inches**

Total Well Depth **20.0 feet**

| Depth (ft) | Interval (%Rec) | Log | Well | Monitor Instr. | USCS | Description | Sample ID |
|------------|-----------------|-----|------|----------------|------|---|-----------|
| 0.0 | 75 | | | | SM | dark brown to black SILTY SAND, loose, dry, subrounded, medium grained, poorly sorted. Upper 1.5 feet, encountered some battery casings, and glass; however mostly clean soils. | |
| 1.0 | | | | | | | |
| 2.0 | | | | | | | |
| 3.0 | | | | | | | |
| 4.0 | 100 | | | | SM | SAND-SILT MIXTURE. | |
| 5.0 | | | | | | | |
| 6.0 | | | | | CH | light gray, firm CLAY, moist, medium plasticity. | |
| 7.0 | | | | | | | |
| 8.0 | 100 | | | | | | |
| 9.0 | | | | | | | |
| 10.0 | | | | | | | |

Lead Products - Lead Products
Station: COHMW01 - Well Construction Log

| Depth (ft) | Interval (%Rec) | Log | Well | Monitor Instr. | USCS | Description | Sample ID |
|---------------|--------------------|-----|------|-------------------|------|--|-----------|
| 11.0 | | | | | | light gray, firm CLAY, moist, medium plasticity. | |
| 12.0 | 100 | | | | | | |
| 13.0 | | | | | | | |
| 14.0 | | | | | | | |
| 15.0 | | | | | | | |
| 16.0 | 100 | | | | SW | light gray to light brown SAND, loose, saturated, rounded, medium grained, well sorted. Encounter saturated sands; very clean, with little silt present. | |
| 17.0 | | | | | | | |
| 18.0 | | | | | | | |
| 19.0 | | | | | CH | light gray to light brown, stiff CLAY, moist, high plasticity. | |
| 20.0 | | | | | | | |

Lead Products - Lead Products **Station: HCIMW01 - Well Construction Log**

Geologist/Engineer **Grayson Pointer**

Start Date **06/09/98** Time **0900**

Drilling Method **Hollow Stem Auger**

Northing **80689.27**

End Date **06/09/98** Time **1050**

Drilling Company **BEST**

Easting **29918.40**

Borehole Diameter **6.0** inches

Ground Elevation **28.47**

Observations:

Total Depth **20.0** feet

Datum Elevation **30.88**

HCIMW01 was placed on the Houston Central Industries property, along the drainage ditch. No OVA was used during drilling, however some organic vapors were present near the capillary fringe.

Completion **Well Pad**

Well Casing **PVC**

Well Diameter **4.0** inches

Total Well Depth **20.0** feet

| Depth (ft) | Interval (%Rec) | Log | Well | Monitor Instr. | USCS | Description | Sample ID |
|------------|-----------------|-----|------|----------------|------|--|-----------|
| 0.0 | 80 | | | | SM | black to dark brown SILTY SAND, loose, dry, subrounded, medium grained, poorly sorted. Encountered a black shale-type media at 3 feet. It appears to be decomposing battery casings. | |
| 1.0 | | | | | | | |
| 2.0 | | | | | | | |
| 3.0 | | | | | | | |
| 4.0 | 100 | | | | CH | light gray, firm CLAY, moist, medium plasticity. | |
| 5.0 | | | | | | | |
| 6.0 | | | | | | | |
| 7.0 | | | | | | | |
| 8.0 | 100 | | | | | | |
| 9.0 | | | | | | | |
| 10.0 | | | | | | | |

Lead Products - Lead Products
Station: HCIMW01 - Well Construction Log

| Depth (ft) | Interval (%Rec) | Log | Well | Monitor Instr. | USCS | Description | Sample ID |
|---------------|--------------------|-----|------|-------------------|------|---|-----------|
| 11.0 | | | | | | light gray, firm CLAY, moist, medium plasticity. | |
| 12.0 | 100 | | | | | | |
| 13.0 | | | | | SW | light gray to light brown SAND, loose, saturated, rounded, medium grained, well sorted. | |
| 14.0 | | | | | | | |
| 15.0 | | | | | | | |
| 16.0 | 100 | | | | | | |
| 17.0 | | | | | CH | brown to pale orange, stiff CLAY, moist, high plasticity. | |
| 18.0 | | | | | | | |
| 19.0 | | | | | | | |
| 20.0 | | | | | | | |

Lead Products - Lead Products **Station: MW05 - Well Construction Log**

Geologist/Engineer **Grayson Pointer**

Start Date **06/09/98** Time **1100**

End Date **06/09/98** Time **1230**

Drilling Method **Hollow Stem Auger**

Drilling Company **BEST**

Borehole Diameter **6.0 inches**

Total Depth **20.0 feet**

Northing **80201.34**

Easting **29644.00**

Ground Elevation **34.34**

Datum Elevation **36.89**

Observations:

Completion **Well Pad**

Well Casing **PVC**

Well Diameter **4.0 inches**

Total Well Depth **20.0 feet**

| Depth (ft) | Interval (%Rec) | Log | Well | Monitor Instr. | USCS | Description | Sample ID |
|------------|-----------------|-----|------|----------------|------|--|-----------|
| 0.0 | 75 | | | | SM | dark brown to black SILTY SAND, loose, dry, subrounded, fine grained, poorly sorted. | |
| 1.0 | | | | | | | |
| 2.0 | | | | | | | |
| 3.0 | | | | | | | |
| 4.0 | 100 | | | | CH | light gray, stiff CLAY, moist, medium plasticity. | |
| 5.0 | | | | | | | |
| 6.0 | | | | | | | |
| 7.0 | | | | | | | |
| 8.0 | 100 | | | | | | |
| 9.0 | | | | | | | |
| 10.0 | | | | | | | |

Lead Products - Lead Products
Station: MW05 - Well Construction Log

| Depth (ft) | Interval (%Rec) | Log | Well | Monitor Instr. | USCS | Description | Sample ID |
|---------------|--------------------|-----|------|-------------------|------|--|-----------|
| 11.0 | | | | | | light gray, stiff CLAY, moist, medium plasticity. | |
| 12.0 | 100 | | | | | | |
| 13.0 | | | | | | | |
| 14.0 | | | | | | | |
| 15.0 | | | | | | | |
| 16.0 | 100 | | | | SW | light gray SAND, loose, saturated, rounded, fine grained, well sorted. | |
| 17.0 | | | | | | | |
| 18.0 | | | | | | | |
| 19.0 | | | | | | | |
| 20.0 | | | | | CH | light gray to pale orange, firm CLAY, moist, medium plasticity. | |